

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VMWARE, INC.,
Petitioner,

v.

CLOUDING CORPORATION,
Patent Owner.

Case IPR2014-01305
Patent 7,272,708 B1

Before JAMESON LEE, JONI Y. CHANG, and MICHAEL W. KIM,
Administrative Patent Judges.

CHANG, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

VMware, Inc. (“VMware”) filed a Petition requesting an *inter partes* review of claims 1–3 and 11–18 of U.S. Patent No. 7,272,708 B1 (Ex. 1001, “the ’708 patent”). Paper 1, “Pet.” In response, Patent Owner Clouding Corporation (“Clouding”) filed a Preliminary Response. Paper 8, “Prelim. Resp.” Taking into account Clouding’s Preliminary Response, we determined that there was a reasonable likelihood that VMware would prevail with respect to at least one of the challenged claims. Pursuant to 35 U.S.C. § 314, we instituted this trial, on February 6, 2015, as to all the challenged claims, namely claims 1–3 and 11–18. Paper 13 (“Dec.”).

Subsequent to institution, Clouding filed a Patent Owner Response (Paper 22, “PO Resp.”), and VMware filed a Reply to the Patent Owner Response (Paper 24, “Pet. Reply”). An oral hearing was held on September 8, 2015.¹

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). For the reasons set forth below, we conclude that VMware has demonstrated by a preponderance of the evidence that claims 1–3 and 11–18 of the ’708 patent are unpatentable.

¹ The oral arguments for the instant proceeding and Case IPR2014-01304 were consolidated. A transcript of the hearing has been entered into the record as Paper 33 (“Tr.”).

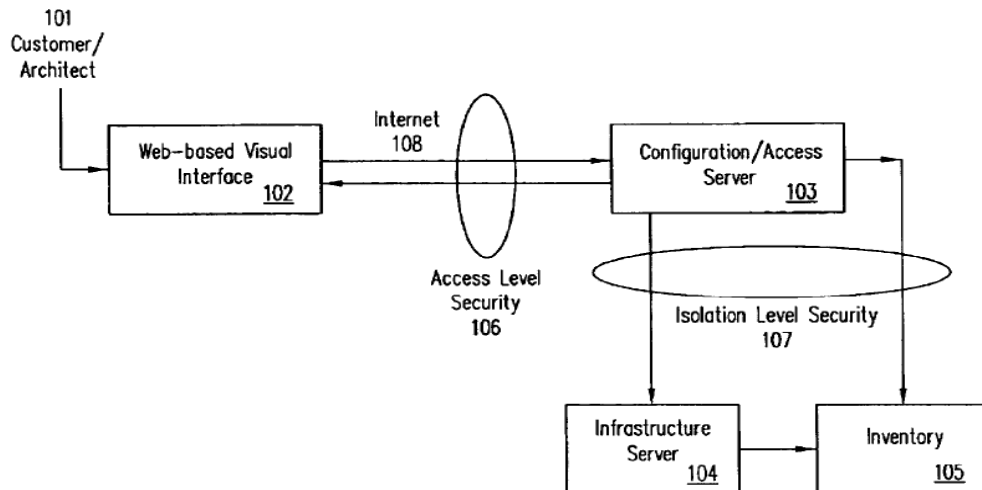
A. Related Matter

The parties indicate that the '708 patent was asserted in *Clouding Corp. v. EMC Corp.*, No. 1:14-cv-01178 (D.Del.), in which VMware is a co-defendant. Papers 6, 7.

B. The '708 Patent

The '708 patent relates to an interactive system for computer system architects to design and create a computing environment dynamically. Ex. 1001, Abs., 1:24–28, 3:3–5. In particular, the '708 patent describes an interactive system that permits computer system architects to design a computing environment by allocating resources (e.g., hardware, software, or communication components) and specifying how the resources are to be used. *Id.* at Abs., 4:22–24.

Figure 1 of the '708 patent, reproduced below, depicts a block diagram of a system for configuring a computing environment:



As shown in Figure 1, customer 101 (e.g., a computer system architect) uses web-based visual interface 102 and Internet 108 to interact with server system 103 for allocating resources. *Id.* at 5:19–41. In response to the customer's request, server 103 allocates resources based on the customer's requirements and the availability of resources in inventory 105. *Id.* Access level security layer 106 and isolation level security layer 107 ensure that customer 101 can access the server and resources, without any other customer being aware of the information passed between web-based visual interface 102 and server 103, such as the specific configuration or computing environment used by customer 101. *Id.*

C. Illustrative Claims

Of the challenged claims, claims 1, 11, 16, and 18 are the only independent claims. Claims 2 and 3 depend, either directly or indirectly, from claim 1; claims 12–15 depend, either directly or indirectly, from claim 11; and claim 17 depends directly from claim 16.

Claims 1 and 11, reproduced below, are illustrative of the claimed subject matter of the '708 patent:

1. A system comprising
a configuration/access server, wherein
 - said configuration/access server is configured to receive information, and
 - said information is based on a user requirement for a configuration of a dynamic computing environment; and

an infrastructure server, wherein said infrastructure server and said configuration/access server are *communicatively coupled* to one another,

said infrastructure server is configured to receive said user requirement from said configuration/access server, and

said infrastructure server is configured to construct said dynamic computing environment by virtue of being configured to perform an operation using a resource in response to said receipt of said user requirement.

Ex. 1001, 7:58–8:7 (emphases added).

11. A system comprising:

a plurality of resources; and

a visual construction of a dynamic computing environment, wherein

said visual construction is presented via *a user interface*,

said visual construction is configured to allow said dynamic computing environment to be configured using said user interface,

said configuration of said dynamic computing environment comprises using said user interface to configure said resources, and

said user interface is configured to allow said configuration of said dynamic computing environment by virtue of said visual construction being configured to

accept a first input comprising a type of operating system for use in said dynamic computing environment,

accept a second input comprising a type of hardware for use within said dynamic computing environment, and

accept a third input from said input device comprising software to be used within said dynamic computing environment.

Id. at 9:10–34 (emphasis added).

D. Prior Art Relied Upon

VMware relies upon the following prior art references:

Aziz	US 6,779,016 B1	Aug. 17, 2004	(Ex. 1002)
Patterson	US 7,093,005 B2	Aug. 15, 2006	(Ex. 1003)
Sanchez-Frank	US 5,394,522	Feb. 28, 1995	(Ex. 1005)

E. Instituted Grounds of Unpatentability

We instituted the instant trial based on the following grounds of unpatentability:

References	Basis	Claims
Patterson	§ 102(e)	11–18
Aziz	§ 102(e)	1–3
Aziz and Sanchez-Frank	§ 103(a)	11–18

II. ANALYSIS

A. Claim Construction

As a first step in our analysis, we determine the meaning of the claims. In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re*

Cuozzo Speed Technologies, LLC, 793 F.3d 1268, 1277–1279 (Fed. Cir. 2015) (“Congress implicitly approved the broadest reasonable interpretation standard in enacting the AIA,”² and “the standard was properly adopted by PTO regulation.”). Under this standard, claim terms generally are given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). An inventor may rebut that presumption by providing a definition of the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In the absence of such a definition, limitations are not to be read from the specification into the claims. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

With the above-stated principles in mind, we construed the following terms in the Decision on Institution: “visual construction” and “a constraint on the hardware.” Dec. 8–11. Subsequent to institution, neither party challenges any aspect of our claim constructions as to these terms. *See generally* PO Resp.; Reply 1–2. Upon review of the entire record before us, including the parties’ explanations and supporting evidence concerning these terms, we discern no reason to change those claim constructions for purposes of this Final Written Decision.

² Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”).

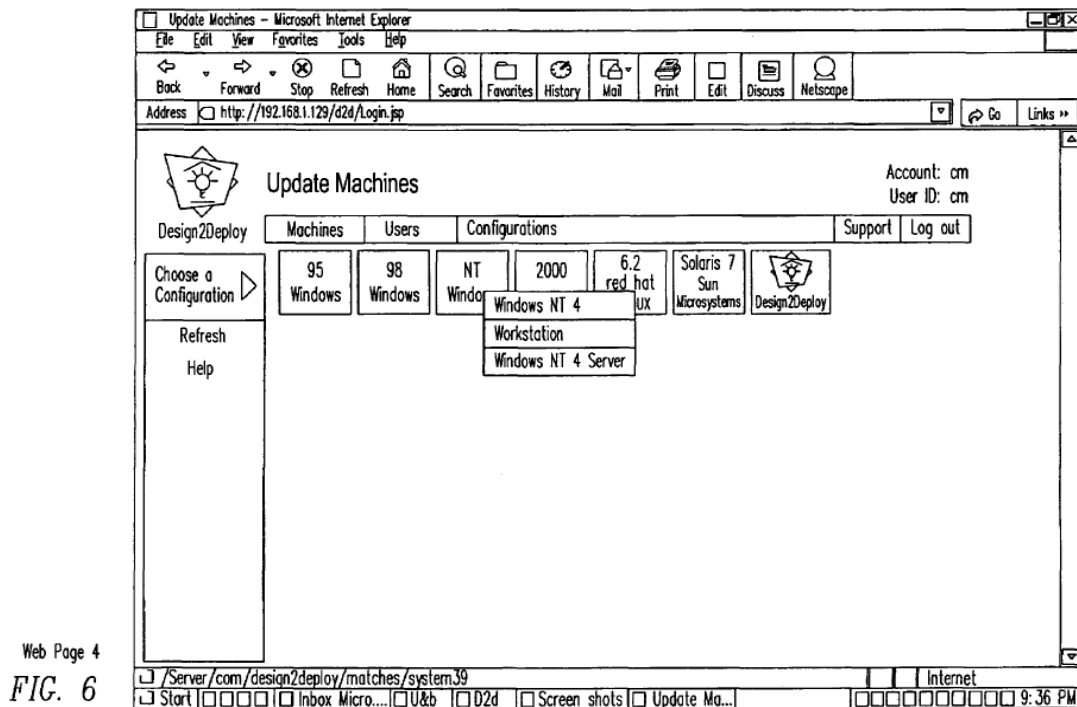
For convenience, those claim constructions from the Decision on Institution are reproduced below:

Claim Terms	Claim Constructions
“visual construction” (claim 1)	A representation of the combination of hardware, software, and communication components. The representation may include at least one of the following: (1) a textual representation; and (2) a graphical representation. Dec. 8–10.
“a constraint on the hardware” (claim 16)	A limit on system parameters associated with a hardware component. Dec. 10–11.

“display a plurality of configurations”

For purposes of this Final Written Decision, we determine that it is necessary to construe expressly the claim term “display a plurality of configurations.” Claim 15 recites “wherein said user interface is configured to allow said configuration of said dynamic computing environment by virtue of said visual construction being configured to *display a plurality of configurations.*” Ex. 1001, 9:61–67 (emphasis added).

As Clouding points out (PO Resp. 7–8), Figure 6 of the ’708 patent, reproduced below, illustrates a user interface that is configured to display a plurality of configurations.



As shown in Figure 6 of the '708 patent, the user interface displays icons for workstations configured with operating systems and specific intended usages (e.g., “Windows NT 4,” “Workstation,” and “Windows NT 4 Server”). Ex. 1001, 6:60–7:1. According to the Specification, based on the selection made by the user, the configuration server allocates a computer with the requested operating system and other application software. *Id.*

In light of the Specification of the '708 patent, we construe the claim term “display a plurality of configurations” broadly, but reasonably, to encompass displaying a plurality of icons representing machines that are configured with operating systems for specific intended usage.

B. Principles of Law

To establish anticipation, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008); *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001). Although the elements must be arranged or combined in the same way as in the claim, “the reference need not satisfy an *ipsissimis verbis* test,” i.e., identity of terminology is not required. *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009); *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990). “A reference anticipates a claim if it discloses the claimed invention such that a skilled artisan could take its teachings in combination with his own knowledge of the particular art and be in possession of the invention.” *In re Graves*, 69 F.3d 1147, 1152 (Fed. Cir. 1995) (internal citation and emphasis omitted). Moreover, “it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.” *In re Preda*, 401 F.2d 825, 826 (CCPA 1968).

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art;

(2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

The level of ordinary skill in the art is reflected by the prior art of record. See *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

We analyze the instituted grounds of unpatentability in accordance with the above-stated principles.

C. Anticipation by Patterson

VMware asserts that claims 11–18 are unpatentable under 35 U.S.C. § 102(e) as anticipated by the Patterson patent.³ Pet. 17–18, 30–57. Clouding counters that VMware fails to establish that the Patterson patent is prior art under § 102(e)(2) against the claims of the '708 patent. PO Resp. 11–16. For the reasons set forth below, we agree with Clouding.

Subsequent to institution of the instant trial, the United States Court of Appeals for the Federal Circuit issued *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378–79 (Fed. Cir. 2015), clarifying the petitioner's burden of proof with respect to a reference patent's entitlement

³ Because the '708 patent was issued from an application that was filed before the effective date of the AIA, we refer to the pre-AIA version of 35 U.S.C. §§ 102, 103, 112, 119, and 120 in this Decision.

to the benefit of the filing date of a provisional application. *Id.* at 1378–82. Specifically, in an *inter partes* review, the petitioner has the ultimate burden of persuasion to prove “unpatentability by a preponderance of the evidence,” and this burden never shifts to the patent owner. *Id.* at 1378–79 (citing 35 U.S.C. § 316(e); *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008)). Also, the petitioner has the initial burden of production—a burden of going forward with evidence. *Id.* at 1379–80.

Further, the Federal Circuit clarified that there is no presumption that a reference patent is necessarily entitled to the benefit of the filing date of a provisional application, or an earlier-filed nonprovisional application if the reference patent was issued from a continuation-in-part application. *Id.* at 1380 (“[B]ecause the PTO does not examine priority claims unless necessary, the Board has no basis to presume that a reference patent is necessarily entitled to the filing date of its provisional application.”); *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1305 (Fed. Cir. 2008) (“When neither the PTO nor the board has previously considered priority, there is simply no reason to presume that claims in a [continuation-in-part] application are entitled to the effective filing date of an earlier filed application.”).

“A reference patent is only entitled [under § 119(e)(1)] to claim the benefit of the filing date of its provisional application if the disclosure of the provisional application provides support for *the claims in the reference patent* in compliance with § 112, ¶ 1.” *Dynamic Drinkware*, 800 F.3d at 1381 (citing *In re Wertheim*, 646 F.2d 527, 537 (CCPA 1981)) (emphasis

added). Also, a reference patent is entitled under § 120 to the benefit of the filing date of an earlier-filed nonprovisional application if the disclosure of that application provides adequate written description for *the claims in the reference patent* in compliance with § 112, ¶ 1. *Wertheim*, 646 F.2d at 537.

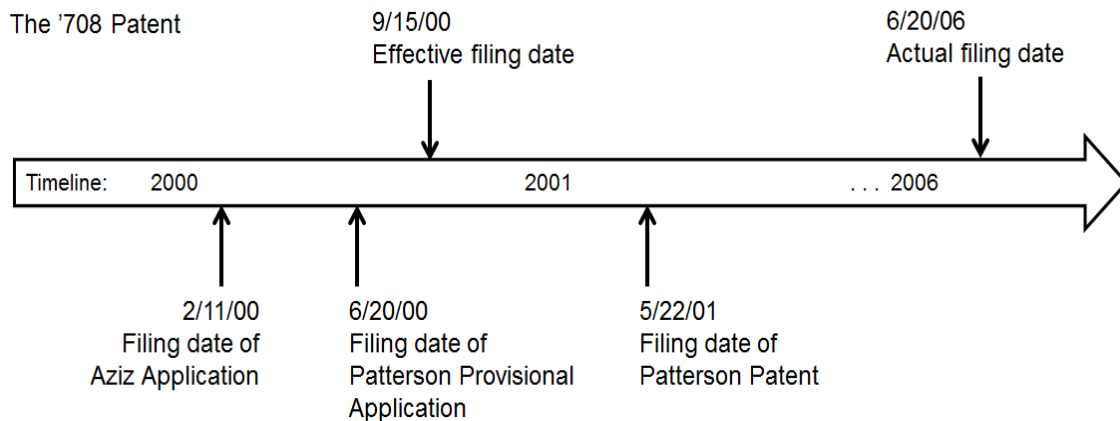
Here, VMware—as Petitioner in the instant *inter partes* review, who asserts that the Patterson patent is prior art under § 102(e)(2) against the claims of the '708 patent—has the burden of persuasion to prove that the challenged claims are unpatentable by a preponderance of the evidence, and this burden never shifts to Clouding.

Further, the application issued as the '708 patent claims under § 120, as a continuation application, the benefit of the filing date of an application, which was filed on September 15, 2000.⁴ Ex. 1001, at [63]. VMware does not challenge the '708 patent's benefit claim, and, in fact, recognizes its burden to show that the Patterson patent is entitled to the benefit of an earlier filing date, at least prior to September 15, 2000, which is before the actual filing date of the Patterson patent (May 22, 2001). Pet. 6, 17–18; Reply 17–19; Ex. 1003, at [22]. In short, VMware also has the burden of production with respect to an effective filing date of the Patterson patent prior to

⁴ We are cognizant that the '708 patent also claims the benefit of the filing date of a provisional application. Ex. 1001, at [60]. That benefit date, August 24, 2000, still is subsequent to the two possible effective filing dates of Patterson shown in the timeline below, and thus does not affect the determination of whether the Patterson patent is prior art to the '708 patent. Therefore, we need not address further whether the '708 patent is entitled to the benefit of the filing date of the earlier-filed provisional application.

September 15, 2000. Ex. 1003, at [21], [22]; Ex. 1001, at [63]. For the reasons discussed below, we conclude that VMware fails to satisfy its burden of production.

The relevant dates are shown in the timeline below:



Patterson patent claims the benefit of the filing date of the Aziz application, as a CIP, and the filing date of the Patterson provisional application

The Patterson patent, on its face, claims under § 119(e)(1) the benefit of the filing date of U.S. Provisional Application No. 60/212,925 filed on June 20, 2000 (Ex. 1004, “the Patterson provisional application”). Ex. 1003 at [60]. The Patterson patent also claims under § 120 (as a continuation-in-part) the benefit of the filing date of U.S. Application 09/502,170 filed on February 11, 2000 (Ex. 3001, “the Aziz nonprovisional application”), which issued as the Aziz patent. *Id.* at [63]. The filing date of each earlier-filed application antedates the effective filing date of ’708 patent (September 15, 2000). Ex. 1001, at [60]. In short, the Patterson patent is prior art to the ’708 patent if the Patterson patent is entitled to the benefit of the filing date

of the Patterson provisional application or the Aziz nonprovisional application.

VMware contends that the Patterson patent is prior art under § 102(e)(2) because the Patterson provisional application provides adequate written description support for the disclosures of the Patterson patent. Pet. 17–18 (citing Ex. 1006 ¶¶ 52–55); Reply 17–19. To support its contention, VMware explains how the Aziz patent and the Patterson provisional application, which incorporates the Aziz nonprovisional application by reference, disclose the subject matter recited in *the claims of the '708 patent*. See, e.g., Pet. 17–18, 30–34; Reply 17–22.

VMware, however, does not explain how the Patterson provisional application or the Aziz nonprovisional application provides adequate written description support for *the claims of the Patterson patent* in compliance with § 112, ¶ 1. See generally Pet.; Reply. Therefore, VMware fails to demonstrate that the Patterson patent is entitled to the benefit of the filing date of the Patterson provisional application or the Aziz nonprovisional application. Consequently, VMware has not established that the Patterson patent is prior art to the '708 patent.

For the foregoing reasons, we determine that VMware has not demonstrated by a preponderance of the evidence that claims 11–18 are unpatentable under § 102(e) as anticipated by the Patterson patent.

D. Anticipation by Aziz

VMware asserts that claims 1–3 are unpatentable under 35 U.S.C. § 102(e) as anticipated by Aziz. Pet. 12–15, 24–29. In support of this asserted ground of unpatentability, VMware provides detailed explanations as to how Aziz describes each claim limitation, and a Declaration of Dr. José Fortes. *Id.* at 26–60; Ex. 1006.

Aziz

Aziz discloses a method and apparatus for providing an extensible, flexible, and scalable computer system—a tool for designing and configuring a dynamic computing environment. Ex. 1002, 1:8–11, 4:13–41. According to Aziz, to solve systems planning, designing, constructing, and operating issues, many builders of web sites and other computing organizations hosted their enterprise web sites at a third-party site and co-locate with other web sites or enterprises. *Id.* at 1:14–40. Moreover, economies of scale are achieved by physically constructing a wide scale computing fabric (“a Computing Grid”) once, and securely and dynamically allocating portions of the Computing Grid to various organizations on demand. *Id.* at 3:28–32.

Each organization’s logical portion of the Computing Grid is referred to as a Virtual Server Farm (VSF), which can be changed dynamically in terms of the number central processing units (CPUs), storage capacity, and network bandwidth based on real-time demands placed on the server farm or other factors. *Id.* at 4:29–35. Each VSF hosts the content and applications

of an organization. *Id.* at 4:51–53. Using a graphic user interface—a set of web pages—the organization can configure or modify a customized VSF by selecting the computing elements, hardware, and software for the VSF. *Id.* at 5:3–8, 15:31–51. The organization retains independent administrative control of its VSF, controlling the computing elements and associated networking and storage elements. *Id.* at 4:31–32, 4:54–5:8.

Discussion

Claim 1 requires a configuration/access server and an infrastructure server communicatively coupled to one another. Ex. 1001, 7:59–67.

Claims 2 and 3, which depend ultimately from claim 1, also require this limitation. *Id.* at 8:8–22.

VMware takes the position that Aziz describes the aforementioned limitation. Pet. 24–27; Ex. 1006 ¶¶ 76–81. According to VMware, Aziz’s server that provides a set of user-interface web pages to enable users to create and modify a customized VSF is a “configuration/access” server, and Aziz’s Control Plane is an “infrastructure” server. Pet. 24–27; Ex. 1002, Abs., 4:24–41, 4:54–5:28, 15:42–51. VMware further submits that the user-interface web server must communicate the user specification to the Control Plane because the Control Plane is the server that constructs the requested VSFs from those user specifications. Pet. 25; Ex. 1002, 5:9–20, 5:29–38; 10:16–24.

Clouding counters that VMware fails to show that Aziz’s user-interface web server is *communicatively coupled* to the Control Plane.

PO Resp. 2–6. According to Clouding, Aziz indicates that after a user enters the information for creating a customized VSF, the “[o]rders *may* be reviewed by human managers to ensure [that] they are appropriate,” and this implies that Aziz’s user-interface web server is a stand-alone server. *Id.* at 5 (citing Ex. 1002, 15:54–55) (emphasis added).

We are not persuaded by Clouding’s arguments, as they narrowly focus on an optional feature and fail to consider Aziz’s disclosure as a whole. Clouding acknowledges that Aziz discloses a server separated from the Control Plane, and that server provides a set of web pages, enabling users to create a customized VSF by specifying the computing elements, hardware, and software for the VSF. PO Resp. 4–5; Ex. 1002, 15:31–51 (“a set of Web pages are served by the Control Plane machine, or by a separate server”). There is no dispute that the users enter their specifications for a VSF using the web pages on this user-interface web server. PO Resp. 4–5; Ex. 1002, 15:31–51 (“The Web pages enable a customer to create a custom VSF, by specifying a number of tiers, the number of computing elements”). Therefore, VMware has shown by a preponderance of the evidence that Aziz’s disclosure of a user-interface web server describes a “configuration/access” server, as required by the claims at issue.

Additionally, as VMware points out, Aziz’s Control Plane comprises one or more servers that are interconnected in a network or by other means. Pet. 25–26; Ex. 1002, 4:64–67. In response to receiving a user specification for a customized VSF, the Control Plane allocates the computing elements and other resources to execute and implement the VSF. Ex. 1002, 3:28–32

(“By physically constructing the computing grid once, and securely and dynamically allocating portions of the computing grid to various organizations on demand, economies of scale are achieved that are difficult to achieve when doing a custom build of each site”); 9:15–10:15 (“Assume that the Control Plane is asked to construct a VSF 1 In response, the Control Plane assigns or allocates CPU . . .”). Accordingly, VMware has shown by a preponderance of the evidence that Aziz’s disclosure of a Control Plane describes an “infrastructure server,” as required by the claims.

As VMware explains also, the user-interface web server must communicate the user specification to the Control Plane because the Control Plane is the server that constructs the requested VSFs from those specifications. Pet. 25; Ex. 1002, 5:9–20, 5:29–38; 10:16–24. Contrary to Clouding’s assertion that human managers “are in place to examine any requested orders and approve same before they are passed to the control plane for implementation” (PO Resp. 6), the sentence relied upon by Clouding describes merely an *optional* feature—“Orders *may* be reviewed by human managers to ensure that they are appropriate.” Ex. 1002, 15:54–55. It does not necessarily imply that the user-interface web server is a standalone server without any communication with the Control Plane, as alleged by Clouding. In fact, the sentence before the passage relied upon by Clouding explicitly states that “[a]fter the customer or user enters such provisioning information, *the Control Plane parses and evaluates the order and queues it for execution.*” *Id.* at 15:52–54 (emphasis added). In order for the Control Plane to accomplish those specific tasks, the user specification

for a VSF must have been communicated from the user-interface web server to the Control Plane.

Furthermore, even if the order was to be reviewed by a human, Aziz clearly indicates that the Control Plane uses the user specification to “configure a VSF that matches the order, and return to the customer a password providing root access to one or more of the computing elements in the VSF,” and the “customer may then upload master copies of applications to execute in the VSF.” *Id.* at 15:56–63. Other portions of Aziz also confirm that the Control Plane and the user-interface web server are communicatively coupled to one another. Namely, the Control Plane modifies the customized VSF by adding or removing a processor or other computing elements in response to a request from the user. Ex. 1002, 10:21–37 (“[B]ecause the organization that owns or operates the VSF wants another server, and has added it through an administrative mechanism, such as a privileged Web page which allows it to add more servers to its VSF. In response, the Control Plane decides to add CPU D to VSF1.”); 16:1–15 (“Through the privileged access mechanism the customer can obtain reports and monitor real-time information related to usage, load, hits or transactions per second, and adjust the characteristics of a VSF based on the real-time information.”); 16:48–17:2 (“[T]he capacity of a VSF may be controlled by providing the customer with an application programming interface (API) that defines calls to the Control Plane for changing resources . . . to ask for more servers, more storage, more bandwidth, etc.”). Based on our review of Aziz as a whole, we credit Dr. Fortes’s testimony that a person with ordinary

skill in the art would have understood that Aziz's Control Plane is configured to receive the user specifications from the user-interface web server, in order to construct VSFs from those specifications, and, therefore, the Control Plane is communicatively coupled to the user-interface web server. Ex. 1006 ¶ 79; Ex. 1015 ¶¶ 12–17.

For the foregoing reasons, we determine that VMware has demonstrated by a preponderance of the evidence that Aziz discloses that a user-interface web server (a configuration/access server) and a Control Plane (an infrastructure server) “are *communicative coupled* to one another,” as required by the claims at issue.

Having reviewed parties' contentions and the evidence before us, we also observe that VMware has established sufficiently that Aziz describes each limitation of claims 1–3 as arranged in the claims. For example, claim 2 recites “wherein said operation comprises at least one of allocating said resource and de-allocating said resource.” Ex. 1001, 8:9–10. As VMware notes (Pet. 26–27), Aziz describes that the user interface enables the user to modify its VSF, increasing or decreasing computing power (e.g., adding another server). Ex. 1002, 15:34–37, 5:49–52, 10:21–37. As a further example, claim 3 recites “wherein said resource is one of said plurality of resources, and each of said resources is one of a hardware component, a software component, and a communication component.” Ex. 1001, 8:17–23. Aziz also describes that the user interface enables the user to create a customized VSF, by specifying a number of tiers, the number of computing elements in a particular tier, the hardware and

software platform used for each element, as well as, web server, application server, or database server software. Ex. 1002, 15:44–49.

For the foregoing reasons, we determine that VMware has demonstrated by a preponderance of the evidence that claims 1–3 are anticipated by Aziz.

E. Obviousness over Aziz and Sanchez-Frank

VMware asserts that claims 11–18 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Aziz and Sanchez-Frank. Pet. 12–15, 18–23, 30–59. In support of this asserted ground of unpatentability, VMware provides detailed explanations as to how each claim limitation is met by the combination of the cited prior art references and articulates a rationale for combining the technical teachings of Aziz and Sanchez-Frank. *Id.* VMware also relies upon the Declaration of Dr. Fortes to support its contentions. Ex. 1006.

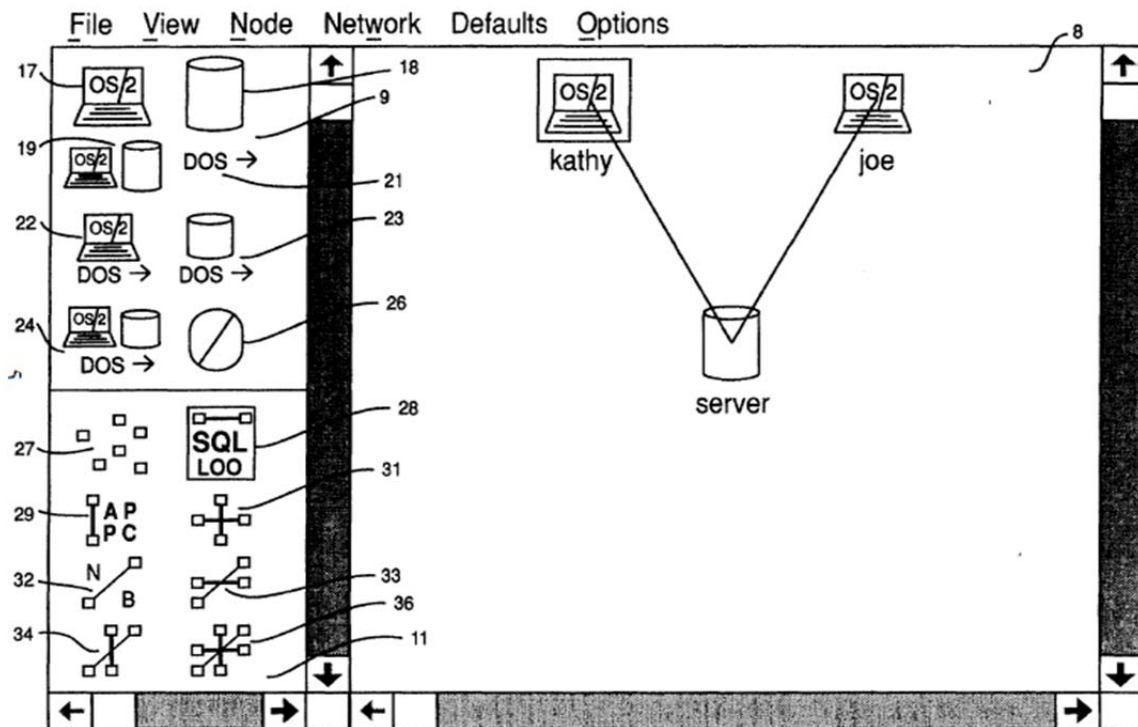
Clouding opposes, arguing that the combination of the cited prior art references fails to suggest certain limitations recited in claims 15, 16, and 18. PO Resp. 7–21.

In the discussion below, we begin with a brief summary of Sanchez-Frank, and then we address the parties’ contentions in turn, focusing on the deficiencies alleged by Clouding.

Sanchez-Frank

Sanchez-Frank describes a system for configuring communication and database networks in a user friendly graphical environment and automatically generating related configuration files. Ex. 1005, Abs.

Sanchez-Frank's system provides a graphical user interface to allow users to use graphical representations to define the network elements. *Id.* at 3:39–53. Figure 4 of Sanchez-Frank, reproduced below, illustrates an example of a graphical user interface.



As shown in Figure 4 of Sanchez-Frank, the graphical user interface displays a graphical representation of a customized network in workspace 8. *Id.* at Abs, 3:39–4:65. The user is permitted to define multiple network workstation nodes using icons (e.g., OS/2 operating system database

requester workstation 17 and OS/2 operating system database server workstation 18 in selection pane 9), specify the resources associated with each icon, define connections between icons using specified protocol constraints (e.g., SQL LOO communication LAN connection icon 28 and advance program to program communication network connection icon 29 in selection pane 11), validate the customized network, and generate the associated configuration files for the workstation nodes. *Id.* The created network topology information can be stored, retrieved, and modified. *Id.* at Abs, 2:32–34, 6:17–32.

Display a plurality of configurations

Claim 15, which depends directly from claim 11, recites “wherein said *user interface* is configured . . . to *display a plurality of configurations*, and accept a first input comprising information specifying one of said configurations.” Ex. 1001, 9:61–67 (emphases added). As discussed above, the claim term “display a plurality of configurations” encompasses displaying a plurality of icons representing machines that are configured with operating systems for specific intended usage.

Clouding maintains that the combination of Aziz and Sanchez-Frank would not have rendered obvious the aforementioned limitation recited in claim 15. PO Resp. 7–11. According to Clouding, Sanchez-Frank describes a user interface configured to display *computing elements*, and not configurations, and Aziz “makes no mention of displaying any of the blueprints.” *Id.* at 9.

We observe, however, that Sanchez-Frank's icons are not representing merely computing elements, as alleged by Clouding, but rather device configurations (e.g., "OS/2 operating system database requester workstation," and "DOS database requester workstation"). Ex. 1005, 4:27–42, Fig. 4. As Dr. Fortes testifies, Sanchez-Frank's icons represent configurations just as the icons disclosed in Figure 6 of the '708 patent ("NT windows workstation," and "Windows NT 4 server") reflect configurations because, in both Sanchez-Frank and the '708 patent, the icons specify machines configured with operating systems for specific intended usages. Ex. 1015 ¶¶ 20–21; Ex. 1001 6:60–7:1, Fig. 6; Ex. 1005, 4:27–42, Fig. 4.

Further, as discussed above, Aziz's user interface enables users to create and modify a customized VSF. Ex. 1002, 15:31–16:22. Aziz allows the users to select from a set of pre-defined logical blueprints in order to assign various computing elements of VSF different roles (e.g., web server, application server, database server, etc.). *Id.* at 8:1–12. Dr. Fortes testifies that one with ordinary skill in the art would have understood that Aziz's user interface "would identify the potential available blueprints (i.e., device configurations) in some way." Ex. 1015 ¶ 18. According to Dr. Fortes, in the combination of Aziz and Sanchez-Frank, "the system would display the 'blueprints' of Aziz as icons and those blueprints are device configurations as claimed in the '708 patent." *Id.* ¶ 21.

Given the evidence before us, we are persuaded that VMware has established by a preponderance of evidence that the combination of Aziz and Sanchez-Frank, as a whole, suggests a user interface that is configured to

“display a plurality of configurations, and accept a first input comprising information specifying one of said configurations,” as recited in claim 15.

A copy of a device configuration

Claim 16 recites “accept a third input comprising a *request for a stored configuration*, wherein said stored configuration is *a copy of a device configuration*.” Ex. 1001, 10:21–23 (emphases added). Claim 17, which depends directly from claim 16, also require this limitation. *Id.* at 10:26–31.

VMware takes the position that the combination of Aziz and Sanchez-Frank suggests the aforementioned “copy” limitation. Pet. 52–55. In particular, VMware maintains that Aziz discloses a user interface that is configured to allow users to request a copy of a pre-defined logical blueprint (a stored device configuration). Pet. 52–53; Ex. 1002, 8:1–12. According to VMware, Sanchez-Frank describes a graphical user interface that enables users to request a copy of a stored device configuration by selecting the “save” and “restore” menu options, which allow the users to make copies of the entire network configuration, and then create new networks from the stored copies. Pet. 54; Ex. 1005, 2:32–34, 6:17–37, 8:24–33.

Clouding counters that the prior art combination does not suggest the aforementioned “copy” limitation as required by the claims at issue. PO Resp. 18–19. In particular, Clouding argues that Aziz’s logical blueprint is not a copy of a device configuration because “[t]here is no suggestion in Aziz that a user may *create* a blueprint by copying another device configuration or that a blue-print is such a copy.” *Id.* (emphasis added).

Clouding also contends that Sanchez-Frank's replication of a *network node* is not a copy of a device configuration. *Id.* at 19.

At the outset, we observe that the claims at issue do not require a user interface that enables the user to *create* a copy of a device configuration, as is evidently alleged by Clouding. Rather, the claim language requires a user interface that is configured to accept a *request* for a stored configuration, which is a copy of a device configuration. Ex. 1001, 10:21–23. As Dr. Fortes testifies, it is irrelevant whether the blueprints of Aziz were *created* by a user, as they are copies of device configurations that can be *requested* by a user through a user interface. Ex. 1015 ¶ 31. We are not persuaded by Clouding's argument that a blueprint is not a copy of a device configuration.

As discussed above, Aziz discloses a user interface (a set of web pages) that allows users to create and modify a customized VSF, “by specifying . . . the hardware and software platform used for each element, and things such as what kind of Web server, application server, or database server software should be preconfigured on these computing elements.” Ex. 1002, 15:31–16:22. Aziz, indeed, allows the users to select from a set of pre-defined logical blueprints in order to assign various computing elements of VSF different roles (e.g., web server, application server, database server, etc.). *Id.* at 8:1–12. As VMware notes, Aziz discloses that logical “blueprints may be stored in the form of a file, a database table, or any other storage format that can associate a boot image location with a role.” Pet. 52; Ex. 1002, 8:1–12. Dr. Fortes testifies that one with ordinary skill in the art

would have understood that a logical blueprint constitutes a “stored configuration” that is a copy of a device configuration. Ex. 1006 ¶ 138. Moreover, because Aziz’s system allows the user subsequently to change the parameters of the customized VSF (e.g., adding or removing a processor or other computing elements), there is no dispute that Aziz’s system is configured to make and save a copy of the customized VSF, which includes a copy of the pre-defined logical blueprint selected by the user. Ex. 1002 9:15–10:37, 16:1–11, Figs 5A–6; *see also id.* at 10:21–24 (“[T]he organization that owns or operates the VSF wants another server, and has added it through an administrative mechanism, such as a privileged Web page which allows it to add more servers to its VSF.”); 16:12–15 (“Through the privileged access mechanism the customer can . . . adjust the characteristics of a VSF based on the real-time information.”).

Furthermore, contrary to Clouding’s argument that Sanchez-Frank discloses a replication of *network nodes* and not device configurations (PO Resp. 19), Sanchez-Frank discloses a graphical user interface that allows users to save and replicate *device configurations*. Ex. 1005, 6:13–48. Notably, Sanchez-Frank describes a system for configuring communication and database networks in a user friendly graphical environment and automatically generating related *configuration files*. *Id.* at Abs. Sanchez-Frank’s system allows users to store, recall, redefine, and re-transmit *network parameters* with relative ease by graphical manipulation. *Id.* at 2:32–34. Ex. 1005, Abs. (“The network topology information so created can be stored, retrieved, and modified as necessary to

suit the needs of an evolving network”), 2:32–34 (“The network parameters are capable of being stored, recalled, redefined and retransmitting with relative ease by graphical manipulation.”). As Dr. Fortes testifies, Figure 11 of Sanchez-Frank discloses all individual device *configuration files* to be generated (and as files, saved) and distributed to the workstations in the defined network. Ex. 1015 ¶ 32; Ex. 1005, 6:17–32 (“FIG. 11 relates to the generation of *configuration files for a network* that has been defined, including the automated installation thereof for networks having requisite LAN requester/server resources” (emphasis added)). Given the evidence before us, we are persuaded by VMware that Sanchez-Frank describes a graphical user interface that enables users to request a copy of a stored device configuration by selecting the “save” and “restore” menu options, which allow the users to make copies of the entire network configuration, and then create new networks from the stored copies. Pet. 54; Ex. 1005, 2:32–34, 6:17–37, 8:24–33.

For the reasons stated above, we are persuaded that VMware has established by a preponderance of the evidence that the combination of Aziz and Sanchez-Frank, as a whole, suggests an user interface that is configured to “accept a third input comprising a request for a stored configuration, wherein said stored configuration is a copy of a device configuration,” as recited in claim 16. Moreover, we observe that VMware articulates a sufficient rationale for combining the teachings of Aziz and Sanchez-Frank. Pet. 20–23 (citing Ex. 1006 ¶¶ 61–65). Specifically, VMware maintains that a person of ordinary skill in the art would have combined Aziz’s system with

Sanchez-Frank's graphical user interface so that users may design and configure Virtual Server Farms or Data Centers using a user-friendly graphical interface, making Aziz's system more "user friendly." *Id.*

Receipt of user requirement

Independent claim 18 recites:

said infrastructure server is configured to construct said dynamic computing environment by virtue of being configured to perform an operation using a resource *in response to said receipt of said user requirement from said user interface.*

Ex. 1001, 10:58–62 (emphasis added).

Clouding asserts that VMware fails to address the aforementioned limitation and that this limitation does not appear in other claims. PO Resp. 16–17. Although this limitation does not appear *verbatim* in other claims, it is reasonably clear, nevertheless, that the last limitation recited in claim 1 is nearly identical to the aforementioned limitation recited in claim 18.

Compare Ex. 1001, 8:4–7 (Claim 1 recites "said infrastructure server is configured to construct said dynamic computing environment . . . *in response to said receipt of said user requirement.*") *with id.* at 10:58–62.

Moreover, it is reasonably clear that Section VII.B.b–c of the Petition also provides the appropriate analysis for the limitation recited in claim 18.

Pet. 25–27, 58–59. As such, the typographical error does not substantiate Clouding's assertion that VMware fails to address the aforementioned limitation, and the error did not impact Clouding's opportunity to respond.

Indeed, Clouding further argues that Aziz's Control Plane, as the infrastructure serve, cannot also be the access/configuration server and

receive user requirements from the user interface. PO Resp. 16–17. But that argument is unavailing. As discussed above and in the Petition (Pet. 26–27), Aziz’s Control Plan, which functions as an infrastructure server, creates a VSF (dynamic computing environment) by allocating CPUs, storage, or other elements (resources) in response to receiving user specifications from the user-interface web server (an access/configuration server). Ex. 1002, 3:28–32, 4:24–41, 5:9–28, 9:15–10:15 (“Assume that the Control Plane is asked to construct a VSF In response, the Control Plane assigns or allocates CPU . . .”). Upon review of evidence in this entire record, we are persuaded that VMware has demonstrated by a preponderance of the evidence that the combination of Aziz and Sanchez-Frank discloses the aforementioned limitation of claim 18.

Conclusion for the obviousness analysis

For reasons stated above, we determine that VMware has demonstrated by a preponderance of evidence that the subject matter of each of claims 11–18, as a whole, is unpatentable under § 103(a) as obvious over the combination of Aziz and Sanchez-Frank.

III. CONCLUSION

For the foregoing reasons, although VMware has not demonstrated that claims 11–18 of the ’708 patent are anticipated by Patterson, we determine that VMware has demonstrated by a preponderance of the evidence that claims 1–3 of the ’708 patent are anticipated by Aziz, and that

claims 11–18 of the '708 patent are unpatentable as obvious over the combination of Aziz and Sanchez-Frank.

IV. ORDER

For the foregoing reasons, it is

ORDERED that claims 1–3 and 11–18 of the '708 patent are held unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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For PETITIONER:

Donald Daybell
Bas de Blank
Mark Shean
Monte M. F. Cooper
Jason Yu
ORRICK, HERRINGTON, & SUTCLIFFE LLP
ddaybell@orrick.com
d2dptabdocket@orrick.com
basdeblank@orrick.com
m2sptabdocket@orrick.com
mcooper@orrick.com
jasonyu@orrick.com

For PATENT OWNER:

Tarek N. Fahmi
ASCENDA LAW GROUP, PC
tarek.fahmi@ascendalaw.com