

UMBRA TECHNOLOGIES LTD.'S REVISED INFRINGEMENT ANALYSIS

U.S. Patent No. 11,146,632– Defendant Cisco Systems, Inc. - UMBRA Technologies Ltd. (“UMBRA”)

Claim 1 – CDIP

UMBRA Technologies Ltd. (“UMBRA”) provides evidence of infringement of claim 1 of U.S. Patent No. 11,146,632 (hereinafter “the ’632 patent”) by Cisco Systems, Inc. (“Cisco”). In support thereof, UMBRA provides the following claim charts.

“Accused Instrumentalities” as used herein refers to at least Cisco systems and methods, including one or more hardware and software products for network virtualization and related services, which by way of example include but are not limited to Cisco Secure Access Service Edge (SASE) (*see, e.g.*, Cisco SASE, <https://www.cisco.com/site/us/en/solutions/secure-access-service-edge-sase/index.html#tabs-9cfa4a460b-item-b8ba101fed-tab>), Cisco Software Defined-WAN (*see, e.g.*, Cisco SD-WAN, https://www.cisco.com/c/en_ph/solutions/enterprise-networks/sd-wan/index.html), Cisco Security Service Edge (SSE) (*see, e.g.*, Cisco SSE, <https://www.cisco.com/site/us/en/solutions/security-service-edge-sse/index.html#tabs-9e2187ae1d-item-8d800bd1e7-tab>), Cisco Data Intelligence Platform (*see, e.g.*, CDIP, <https://www.cisco.com/c/en/us/solutions/collateral/data-center-virtualization/big-data/data-intelligence-platform-so.pdf>), Cisco Unified Computing System (*see, e.g.*, Cisco UCS, https://www.cisco.com/c/en_be/products/servers-unified-computing/index.html) and Cisco HyperFlex Systems (Hyper Converged Infrastructure or “HCI”) (*see, e.g.*, Cisco HCI, <https://www.cisco.com/site/us/en/products/computing/hyperconverged-infrastructure/index.html#tabs-9cfa4a460b-item-b8ba101fed-tab>) and certain related earlier versions (the “Accused Instrumentalities”). These claim charts demonstrate Cisco’s infringement, and provide notice of such infringement, by comparing each element of the asserted claims to corresponding components, aspects, and/or features of the Accused Instrumentalities. These claim charts are not intended to constitute an expert report on infringement. These claim charts include information provided by way of example, and not by way of limitation.

In particular, the exemplary analysis below is directed to demonstrating infringement via Cisco’s Data Intelligence Platform (*see, e.g.*, CDIP, <https://www.cisco.com/c/en/us/solutions/collateral/data-center-virtualization/big-data/data-intelligence-platform-so.pdf>) as the Accused Instrumentalities. The analysis set forth below is based only upon information from publicly available resources regarding the Accused Instrumentalities, as Cisco has not yet provided any non-public information. An analysis of Cisco’s (or other third parties’) technical documentation and/or software source code may assist in fully identifying all infringing features and functionality. Accordingly, UMBRA reserves the right to supplement this infringement analysis once such information is made available to UMBRA. Furthermore, UMBRA reserves the right to revise this infringement analysis, as appropriate, upon issuance of a court order construing any terms recited in the asserted claims. UMBRA provides this evidence of infringement and related analysis without the benefit of claim construction or expert reports or discovery. UMBRA reserves the right to supplement, amend or otherwise modify this analysis and/or evidence based on any such claim construction or expert reports or discovery.

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May 13, 2024

Note: All internet sources last accessed and downloaded May 13, 2024.

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Unless otherwise noted, UMBRA contends that Cisco directly infringes the '632 patent in violation of 35 U.S.C. § 271(a) by selling, offering to sell, making, using, and/or importing the Accused Instrumentalities. The following exemplary analysis demonstrates that infringement. Unless otherwise noted, UMBRA further contends that the evidence below supports a finding of indirect infringement under 35 U.S.C. §§ 271(b) and/or (c), in conjunction with other evidence of liability under one or more of those subsections. Cisco makes, uses, sells, imports, or offers for sale in the United States, or has made, used, sold, imported, or offered for sale in the past, without authority, or induces others to make, use, sell, import, or offer for sale in the United States, or has induced others to make, use, sell, import, or offer for sale in the past, without authority products, equipment, or services that infringe claim 1 of the '632 patent, including without limitation, the Accused Instrumentalities.

Unless otherwise noted, UMBRA believes and contends that each element of each claim asserted herein is literally met through Cisco's provision of the Accused Instrumentalities. However, to the extent that Cisco attempts to allege that any asserted claim element is not literally met, UMBRA believes and contends that such elements are met under the doctrine of equivalents. More specifically, in its investigation and analysis of the Accused Instrumentalities, UMBRA did not identify any substantial differences between the elements of the patent claims and the corresponding features of the Accused Instrumentalities, as set forth herein. In each instance, the identified feature of the Accused Instrumentalities performs at least substantially the same function in substantially the same way to achieve substantially the same result as the corresponding claim element.

To the extent the chart of an asserted claim relies on evidence about certain specifically identified Accused Instrumentalities, UMBRA asserts that, on information and belief, any similarly functioning instrumentalities also infringes the charted claim. UMBRA notes that the case is currently stayed by the Court, and UMBRA provides this analysis for informational purposes at this stage. UMBRA reserves the right to amend this infringement analysis based on other products made, used, sold, imported, or offered for sale by Cisco. UMBRA also reserves the right to amend this infringement analysis by citing other claims of the '632 patent, not listed in the claim chart, that are infringed by the Accused Instrumentalities. UMBRA further reserves the right to amend this infringement analysis by adding, subtracting, or otherwise modifying content in the “Accused Instrumentalities” column of each chart.

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Claim 1 – CDIP

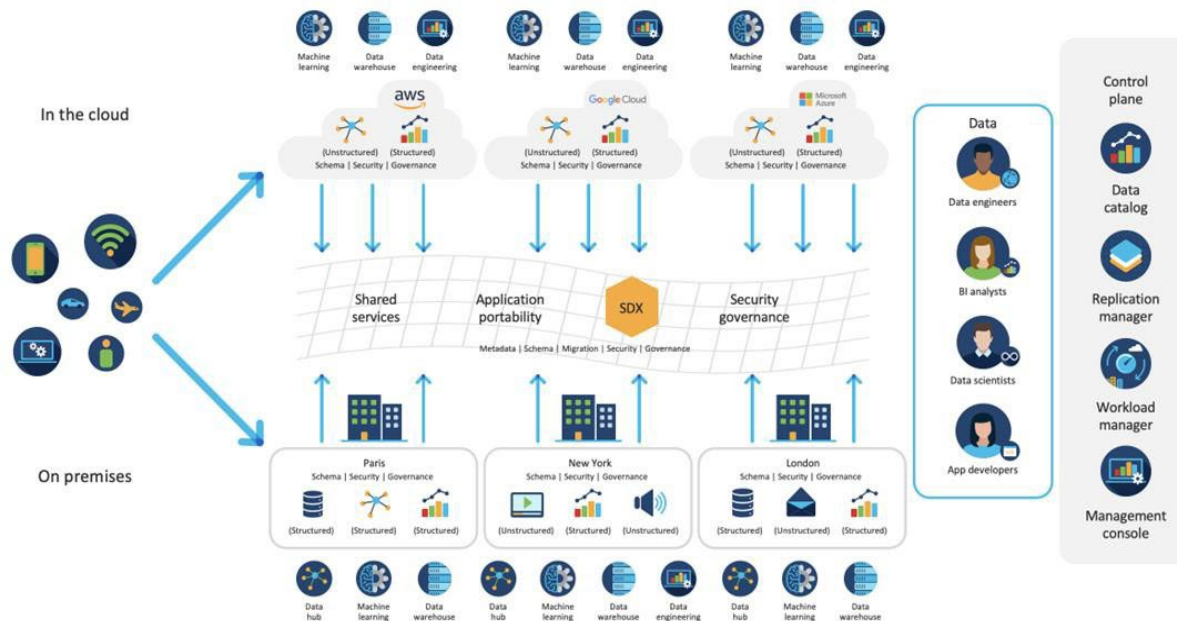
Claim 1	Accused Instrumentalities
A network system for providing data beacons, comprising:	The Accused Instrumentalities comprise a network system for providing data beacons. The Accused Instrumentalities comprise the Cisco Data Intelligence Platform (CDIP) as a network system for providing Cisco server nodes providing data beacons (where “data beacon” is understood to mean a signal delivered via one-way casting or one-way multi-casting) via KafkaDirect data transfer. Figure 1. Cisco Data Intelligence Platform (CDIP) – Evolution of Data Lake to Hybrid Cloud The diagram illustrates the CDIP architecture. At the top, a green bar represents 'User / Serving / API'. Below it, a blue cloud represents the 'Public cloud' (AI, Data Lake, Spark, Kubernetes) and a light blue cloud represents the 'Private cloud' (AI, Spark, Kubernetes). A double-headed arrow labeled 'Hybrid/ Multi-cloud' connects the two clouds. A green box labeled 'CDIP' sits between the clouds and a 'Data lake' box. The 'Data lake' box contains 'Apache Kafka' and 'Spark' (with 'HDFS/ Apache Ozone Spark Streaming' below it). 'Data Sources' (represented by icons of a phone, Wi-Fi, and a person) have a dashed arrow labeled 'Ingest' pointing to the 'Data lake'. A dashed arrow labeled 'Event Streaming with persistent storage on Kafka/Ozone' points from the 'Data lake' to the 'Public cloud'. A dashed arrow labeled 'CDIP' points from the 'Private cloud' to the 'Data lake'. A dashed arrow labeled 'Hybrid, Multi-Cloud' points from the 'Data lake' to the 'Private cloud'. Source: Cisco Data Intelligence Platform on Cisco UCS M6 with Cloudera Data Platform Private Cloud Base, see page 9 of 188 https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/UCS_CVDs/cdip_pvc_ucs_m6.html Upon information and belief, the ingest of data streaming with storage on Kafka depicted in Figure 1 utilizes a KafkaDirect API, with optimization utilizing RDMA access in a one-way, uni-cast data transfer.

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Figure 2. CDIP – Hybrid Cloud Architecture



Source: Cisco Data Intelligence Platform on Cisco UCS M6 with Cloudera Data Platform Private Cloud Base, see page 9 of 188

https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/UCS_CVDs/cdip_pvc_ucs_m6.html

More specifically, upon information and belief, the transfer of data depicted in Figure 2 involves RDMA access in a one-way (*i.e.*, uni-cast) data transfer occurring between geographically remote nodes located in separate cities.

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“This solution is based on the Cisco Data Intelligence Platform that includes computing, storage, connectivity, capabilities built on Cisco Unified Computing System (Cisco UCS) infrastructure, using Cisco UCS C-Series and S-Series Rack Servers and unified management with Cisco Intersight to help companies manage the entire infrastructure from a single pane of glass along with Cloudera Data Platform to provide the software for fast ingest of data and managing and processing exabyte scale data being collected. This architecture is specifically designed for performance and linear scalability for big data and machine learning workload.”

Source: Cisco Data Intelligence Platform on Cisco UCS M6 with Cloudera Data Platform Private Cloud Base, see page 6 of 188

https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/UCS_CVDs/cdip_pvc_ucs_m6.html

The evidence above confirms the Accused Instrumentalities comprise network system for providing data beacons.

To the extent any of the above-referenced claim language is construed or applied so that no literal infringement is found, then UMBRA contends that this element is met under the doctrine of equivalents. The above-identified features and instrumentalities perform substantially the same function as the recited claim element, in substantially the same way, to achieve substantially the same result. Any differences are insubstantial.

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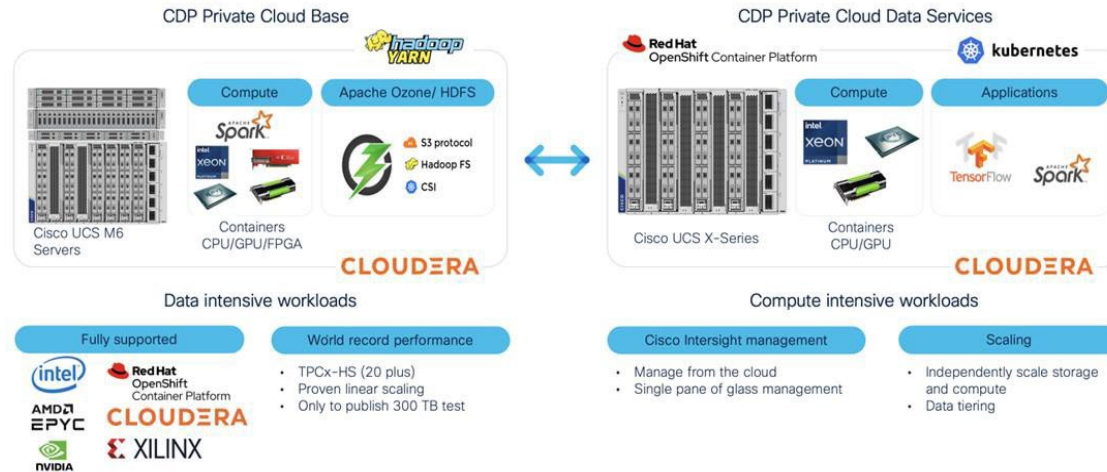
Claim 1 – CDIP

a first node comprising a first read queue, a first write queue, and a first parallel file system;

The Accused Instrumentalities comprise a first node comprising a first read queue, a first write queue, and a first parallel file system.

The Accused Instrumentalities comprise a first Cisco Node in the CDIP, as a first node, comprising an inferred first read queue, an inferred first write queue, and an inferred first parallel file system as a first read queue, a first write queue, and a first parallel file system.

Figure 3. Cisco Data Intelligent Platform with Cloudera Data Platform



“This architecture can start from a single rack (Figure 4) and scale to thousands of nodes...”

SOURCE: Cisco Data Intelligence Platform on Cisco UCS M6 with Cloudera Data Platform Private Cloud Base, see page 11 of 188, (showing exemplary servers in CDIP with Cisco nodes)

https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/UCS_CVDs/cdip_pvc_ucs_m6.html

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Claim 1 – CDIP

Figure 5. Cisco Data Intelligent Platform at Scale

Scaling Cisco Data Intelligence Platform

Single Rack

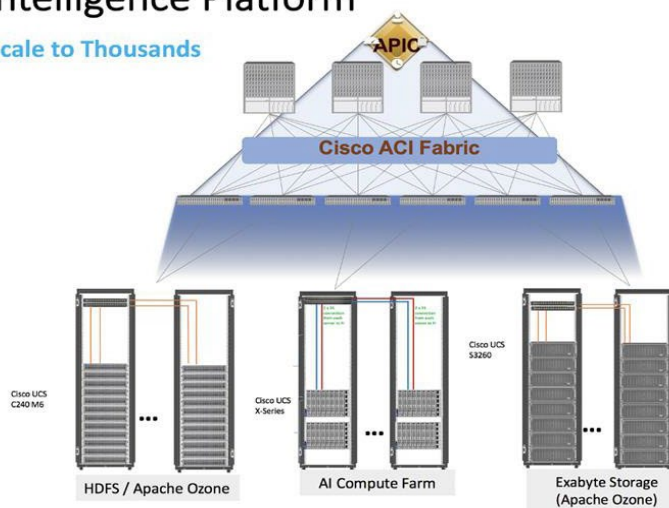
2 x Cisco UCS 6454
Fabric Interconnect

Data Lake /
Data Intensive Workload
Cisco UCS C240 M6

AI/Compute Farm
Cisco UCS X-Series

Exabyte Scale Storage
(Apache Ozone)
Cisco UCS S3260

Scale to Thousands



Reference Architecture

Cisco Data Intelligence Platform reference architectures are carefully designed, optimized, and tested with the leading big data and analytics software distributions to achieve a balance of performance and capacity to address specific application requirements. You can deploy these configurations as is or use them as templates for building custom configurations. You can scale your solution as your workloads demand, including expansion to thousands of servers using Cisco Nexus 9000 Series Switches. The configurations vary in disk capacity, bandwidth, price, and performance characteristics.

SOURCE: Cisco Data Intelligence Platform on Cisco UCS M6 with Cloudera Data Platform Private Cloud Base, see page 13 of 188, (showing exemplary servers in CDIP as Cisco Nodes)

https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/UCS_CVDs/cdip_pvc_ucs_m6.html

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Claim 1 – CDIP

	The evidence above confirms the Accused Instrumentalities comprise a first Cisco Node in the CDIP, as a first node, comprising an inferred first read queue, an inferred first write queue, and an inferred first parallel file system as a first read queue, a first write queue, and a first parallel file system. To the extent any of the above-referenced claim language is construed or applied so that no literal infringement is found, then UMBRA contends that this element is met under the doctrine of equivalents. The above-identified features and instrumentalities perform substantially the same function as the recited claim element, in substantially the same way, to achieve substantially the same result. Any differences are insubstantial.
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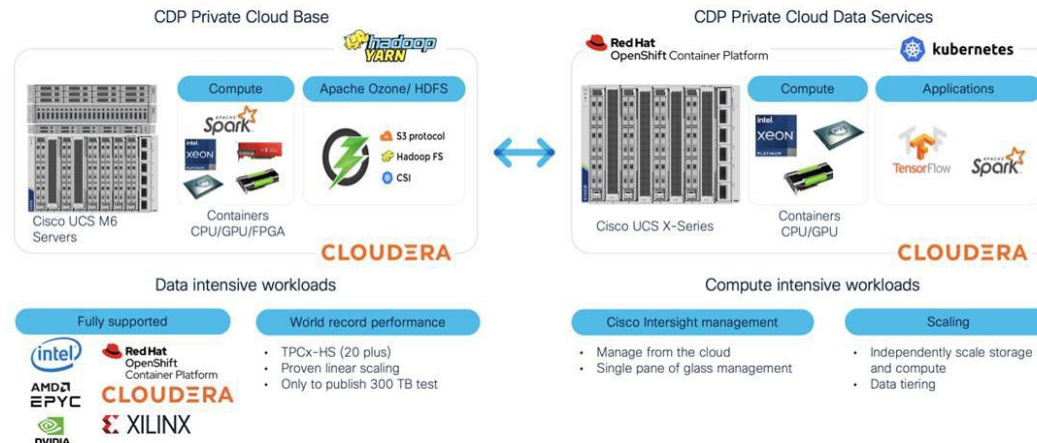
Claim 1 – CDIP

a second node comprising a second read queue, a second write queue, and a second parallel file system;

The Accused Instrumentalities comprise a second node comprising a second read queue, a second write queue, and a second parallel file system.

The Accused Instrumentalities comprise a second Cisco Node in the CDIP, as a second node, comprising an inferred second read queue, an inferred second write queue, and an inferred second parallel file system as a second read queue, a second write queue, and a second parallel file system.

Figure 3. Cisco Data Intelligent Platform with Cloudera Data Platform



“This architecture can start from a single rack (Figure 4) and scale to thousands of nodes...”

SOURCE: Cisco Data Intelligence Platform on Cisco UCS M6 with Cloudera Data Platform Private Cloud Base, see page 11 of 188, (showing exemplary servers in CDIP with Cisco nodes)

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Reference Architecture

Cisco Data Intelligence Platform reference architectures are carefully designed, optimized, and tested with the leading big data and analytics software distributions to achieve a balance of performance and capacity to address specific application requirements. You can deploy these configurations as is or use them as templates for building custom configurations. You can scale your solution as your workloads demand, including expansion to thousands of servers using Cisco Nexus 9000 Series Switches. The configurations vary in disk capacity, bandwidth, price, and performance characteristics.

SOURCE: Cisco Data Intelligence Platform on Cisco UCS M6 with Cloudera Data Platform Private Cloud Base, see page 13 of 188, (showing exemplary servers in CDIP with Cisco nodes)
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The evidence above confirms the Accused Instrumentalities comprise a second Cisco Node in the CDIP, as a second node, comprising an inferred second read queue, an inferred second write queue, and an inferred second parallel file system as a second read queue, a second write queue, and a second parallel file system.

To the extent any of the above-referenced claim language is construed or applied so that no literal infringement is found, then UMBRA contends that this element is met under the doctrine of equivalents. The above-identified features and instrumentalities perform substantially the same function as the recited claim element, in substantially the same way, to achieve substantially the same result. Any differences are insubstantial.

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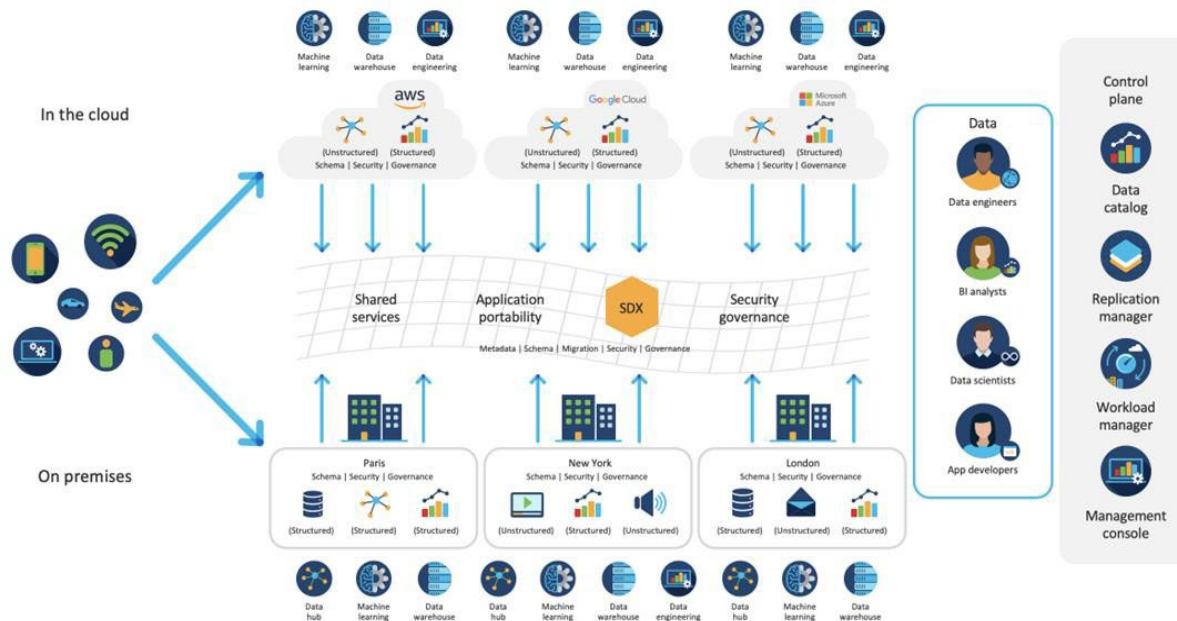
Claim 1 – CDIP

wherein the first node writes first data from the first write queue to the second parallel file system;
and

In the Accused Instrumentalities, the first node writes first data from the first write queue to the second parallel file system.

In the Accused Instrumentalities, the first Cisco Node in the CDIP, as the first node, writes first data from the inferred first write queue to the inferred second parallel file system of the second Cisco Node.

Figure 2. CDIP – Hybrid Cloud Architecture



Source: Cisco Data Intelligence Platform on Cisco UCS M6 with Cloudera Data Platform Private Cloud Base, see page 9 of 188 (showing first and second Cisco nodes in different representative U.S. cities) https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/UCS_CVDs/cdip_pvc_ucs_m6.html

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Claim 1 – CDIP

	The evidence above confirms in the Accused Instrumentalities, the first Cisco Node in the CDIP, as the first node, writes first data from the first inferred write queue as the first write queue to the inferred second parallel file system of the second Cisco Node. To the extent any of the above-referenced claim language is construed or applied so that no literal infringement is found, then UMBRA contends that this element is met under the doctrine of equivalents. The above-identified features and instrumentalities perform substantially the same function as the recited claim element, in substantially the same way, to achieve substantially the same result. Any differences are insubstantial.
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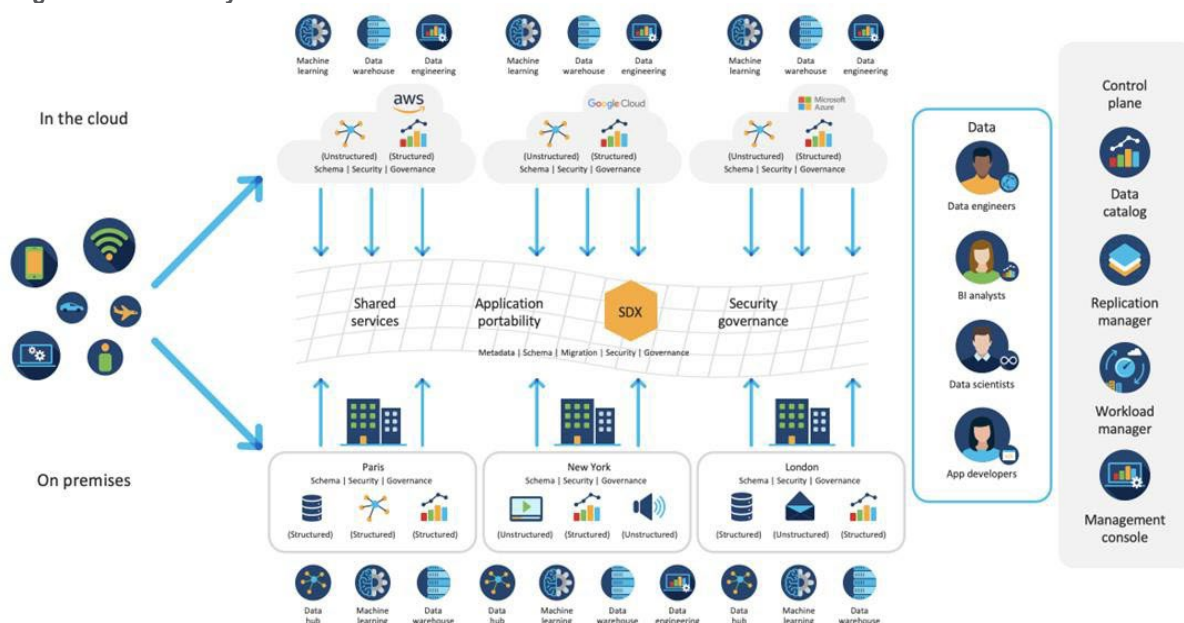
Claim 1 – CDIP

wherein the second node reads the first data from the second parallel file system and places the first data in the second read queue.

In the Accused Instrumentalities, the second node reads the first data from the second parallel file system and places the first data in the second read queue.

In the Accused Instrumentalities, the second Cisco Node in the CDIP, as the second node, reads the first data from the inferred second parallel file system and places the first data in the inferred second read queue in the second Cisco Node.

Figure 2. CDIP – Hybrid Cloud Architecture



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	The evidence above confirms in the Accused Instrumentalities, the second Cisco Node in the CDIP, as the second node, reads the first data from the inferred second parallel file system and places the first data in the inferred read queue in the second Cisco Node. To the extent any of the above-referenced claim language is construed or applied so that no literal infringement is found, then UMBRA contends that this element is met under the doctrine of equivalents. The above-identified features and instrumentalities perform substantially the same function as the recited claim element, in substantially the same way, to achieve substantially the same result. Any differences are insubstantial.
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Caveat: The notes and/or cited excerpts utilized herein are set forth for illustrative purposes only and are not meant to be limiting in any manner. For example, the notes and/or cited excerpts, may or may not be supplemented or substituted with different excerpt(s) of the relevant reference(s), as appropriate. Further, to the extent any error(s) and/or omission(s) exist herein, all rights are reserved to correct the same.