

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

| | | |
|---------------------------------|---|-------------------------|
| ADVANCED CLUSTER SYSTEMS, INC., |) | |
| |) | |
| Plaintiff, |) | |
| |) | |
| v. |) | C.A. No. 19-2032-MN-CJB |
| |) | |
| NVIDIA CORPORATION, NVIDIA |) | |
| SINGAPORE PTE. LTD., and NVIDIA |) | |
| INTERNATIONAL, INC., |) | |
| |) | |
| Defendants. |) | |

AMENDED JOINT CLAIM CONSTRUCTION CHART

Pursuant to the Court’s Scheduling Order (D.I. 17), as amended on July 9, 2021 (D.I. 82) and January 10, 2022 (D.I. 107), and the Court’s October 4, 2022 order (D.I. 247), Plaintiff Advanced Cluster Systems, Inc. and Defendants NVIDIA Corporation, NVIDIA Singapore Pte. Ltd., and NVIDIA International, Inc. (collectively, “NVIDIA”) hereby provide the following Amended Joint Claim Construction Chart for U.S. Patent No. 10,333,768 (the “768 Patent”).

A. Construction of terms on which the parties agree

The parties have not agreed to any constructions.

B. Parties’ constructions of disputed terms

In accordance with the Scheduling Order, the parties’ proposed claim constructions are provided below. Each party reserves the right to rely on any evidence identified below by the other party.

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Joint Claim Construction Chart
Disputed Terms

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|---------------------------|-----------------|---|--|--|---|
| peer-to-peer architecture | Claims 1 and 35 | architecture in which each node can communicate tasks and data with other nodes without the tasks and data being required to go through a central server or master node | <p>U.S. Patent No. 10,333,768 at col. 1, ll. 44-62, col. 3, ll. 39-49, col. 6, ll. 26-62, col. 12, ll. 26-40, col. 23, ll. 13-14, 51-56, col. 24, ll. 39-40, 52-53, col. 25, ll. 1-47, col. 26, l. 65-col. 27, l. 67, claims 1-25, 30-39, FIG. 2.</p> <p>File History for U.S. Patent No. 10,333,768 at 2016-11-16 Miscellaneous Internal Document at 1; 2016-11-16 Applicant Initiated Interview Summary at 2; 2016-11-21 Applicant Arguments/Remarks Made in an Amendment at 8-9; 2016-11-21 Claims at 2; 2017-03-09 Final</p> | an architecture in which each node is configured to communicate with other nodes | '768 patent at 1:5-62, 3:39-55, 6:15-29, 12:26-40, 14:45-65, 17:1-45, 21:25-50, 24:35-25:21, 25:22-47, 26:65-27:67, 30:33-67, FIG. 2. |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|------------|----------|-----------------------------|---|--------------------------------|-----------------------------|
| | | | Rejection at 5, 7; 2017-08- 08 Claims at 2, 8; 2017-08-08 Applicant Arguments/Remarks Made in an Amendment at 10-11; 2017-08-08 Miscellaneous Internal Document at 1; 2017-08-08 Applicant Initiated Interview Summary at 2; 2018-04-13 Non- Final Rejection at 5, 7-8; 2018-04-13 Miscellaneous Internal Document at 1; 2018-10-05 Applicant Arguments/Remarks made in an Amendment at 13-14 2018-10-05 Claims at 2, 10; 2018-11-29 Notice of Allowance and Fees Due at 3, 11. IPR2021-00019 Petition | | |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|---------------------|--------------------|-----------------------------|---|--|--|
| cluster node module | Claims 4, 7-8, 10, | a module that establishes | <p>for IPR at 1, 5-6, 18-22, 24, 28-32, 42, 53, 68, 70, 76;</p> <p>IPR2021-00019 Patent Owner's Preliminary Response at 1-16, 20-26, 32, 34-48, 50-51;</p> <p>IPR2021-00019 Denial of Institution of IPR at 10-11, 13, 17-19, 21-22;</p> <p>IPR2021-00020 Petition for IPR at 1, 5-7, 16-24, 29-31, 45, 60, 66, 73, 77;</p> <p>IPR2021-00020 Patent Owner's Preliminary Response at 1-14, 23-30, 33-47, 49-50;</p> <p>IPR2021-00020 Denial of Institution of IPR at 11, 14, 20-22;</p> <p>IPR2021-00019/IPR2021-00020 Petitioners Reply to Patent Owner's Preliminary Response.</p> | a module running on each cluster node, | '768 patent at 1:25-43, 2:24-29, 2:34-3:8, |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|------------|---------------|---|--|--|---|
| | 27, and 30-31 | intercommunication among nodes in a computer cluster and allows exchanging messages among nodes using a peer-to-peer-architecture | col. 1, ll. 44-62, col. 2, ll. 30-57, col. 2, l. 58-59, col. 3, ll. 17-26, col. 3, ll. 28-38, col. 4, ll. 56-62, col. 5, l. 16-17, col. 6, l. 38, col. 11, ll. 13-50, col. 11, ll. 41-54, col. 11, l. 55-col. 21, l. 61, col. 12, ll. 41-53, col. 16, ll. 39-61, col. 21, l. 62-col. 22, l. 24, col. 22, ll. 25-45, col. 22, l. 48-col. 23, l. 7, col. 23, l. 28-col. 26, l. 39, col. 30, ll. 1-4, FIG. 2, FIG. 3, FIG. 4, FIG. 5, claims 1, 4-8, 10, 14-17, 27-28, 30-32, 35. U.S. Patent No. 7,768,289 at claims 8-9, 13, 26. File History for U.S. Patent No. 10,333,768 at 2014-09-08 Claims at 2; 2016-07-20 Non-Final Rejection at 3-4, 14-16; Miscellaneous Internal Document at 2; 2016-11-21 Claims at 2-6; 2017-03-09 Final Rejection at 4-5, 8-12, | configured to communicate messages with the single-node kernel on the same node, and with other cluster node modules | 4:13-16, 4:58-63, 5:33-6:25, 6:26-30, 11:21-23, 11:32-40, 11:42-12:2, 12:41-46, 23:10-26, 23:51-62, 24:29-31, 24:39-44, 24:52-58, Figures 2-5 |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|------------|----------|-----------------------------|--|--------------------------------|-----------------------------|
| | | | <p>17; 2017-08-08 Claims at 2-7; 2017-08-08 Miscellaneous Internal Document at 2; 2018-04-13 Non-Final Rejection at 4-5, 10-14, 21-24; 2018-10-05 Claims at 3-4, 7-9; Notice of Allowance and Fees Due at 4-5, 8, 10-11.</p> <p>IPR2021-00019 Petition for IPR at 5, 14, 34, 52-70, 75-77;</p> <p>IPR2021-00019 Patent Owner's Preliminary Response at 1-6, 8-16, 29-32, 50-52;</p> <p>IPR2021-00019/IPR2021-00020 Petitioners Reply to Patent Owner's Preliminary Response at 4-7;</p> <p>IPR2021-00019/IPR2021-00020 Patent Owner's Consolidated Sur-Reply In Support Of Its Preliminary Responses</p> | | |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|---|--------------------------|---|--|--|--|
| | | | at 4-9; IPR2021-00019 Denial of Institution of IPR at 5-6, 10-11, 22; IPR2021-00020 Petition for IPR at 5, 16-17, 26, 53-56, 58; IPR2021-00020 Patent Owner's Preliminary Response at 3-6, 8-15, 21-22, 49-50; IPR2021-00020 Denial of Institution of IPR at 5-6, 11-12, 20. | | |
| Claim Terms Identified By NVIDIA | | | | | |
| kernel | Claims 1, 26, 29, and 35 | plain and ordinary meaning: program code | U.S. Patent No. 10,333,768 at Abstract, col. 1, ll. 29-43, col. 1, ll. 47-63, col. 2, ll. 18-23, col. 2, l. 30-col. 3, l. 26, col. 4, ll. 14-23, col. 4, ll. 56-62, col. 5, l. 15-col. 6, l. 29, col. 7, ll. 28-32, col. 8, ll. 44-49, col. 9, ll. 63-67, col. 11, ll. 13-32, col. 11, ll. 41-45, col. 11, l. 55-col. 12, l. 2, col. 12, ll. 5, col. 12, ll. 26-37, col. 13, ll. 41- | program code for interpreting high-level code, commands, and/or instructions supplied by a user or a script into low-level code, such as, for example, machine language or assembly language | '768 patent at Abstract, 1:29-62, 1:37-43, 2:18-3:55, 4:14-33, 4:37-62, 5:16-6:38, 7:11-32, 8:29-49, 9:48-67, 11:15-12:2, 12:14-40, 13:25-40 (Table B),13:42-46, 14:1-28, 22:26-23:26, 23:34-37, 23:57-24:34, 24:36-38, 24:52-25:61, 26:4-39, 30:28- |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|------------|----------|-----------------------------|---|--------------------------------|--|
| | | | <p>47, col. 14, ll. 1-28, col. 22, ll. 25-45, col. 22, l. 48-col. 23, l. 8, col. 23, ll. 8-26, col. 23, l. 28-col. 26, l. 39, col. 29, l. 66-col. 30, l. 1, FIG. 2, Table B, Table C, claims 1-39.</p> <p>File History for U.S. Patent No. 10,333,768 at 2014-09-08 Claims at 2; 2016-07-20 Non-Final Rejection at 4, 7-8, 14-17; 2016-11-16 Miscellaneous Internal Document at 1-2; 2016-11-21 Claims at 2-6; 2017-03-09 Final Rejection at 5-18; 2017-08-08 Claims at 2-7; 2017-08-08 Applicant Arguments/Remarks Made in an Amendment at 10; 2017-08-08 Miscellaneous Internal Document at 1-2; 2017-08-08 Applicant Initiated Interview Summary at 2; 2018-04-13 Non-Final Rejection at 5, 7, 10-18, 21-24,</p> | | <p>43, claims 1, 2, 5, 6, 12, 16, 19, 23-32, 35.</p> |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|------------|----------|-----------------------------|--|--------------------------------|-----------------------------|
| | | | <p>26, 29; 2018-05-22 Miscellaneous Internal Document at 1-2; 2018-05-22 Applicant Initiated Interview Summary at 1; 2018-05-22 Examiner Initiated Interview Summary at 2; 2018-10-05 Claims at 2-10; 2018-11-29 Notice of Allowance and Fees Due at 3-12.</p> <p>IPR2021-00019 Petition for IPR at 1, 5-6, 16-37, 40-44, 47, 49-56, 58-60, 62-69, 71-77;</p> <p>IPR2021-00019 Patent Owner's Preliminary Response at 1, 10-11, 15, 22, 32, 34-47;</p> <p>IPR2021-00019/IPR2021-00020 Petitioners Reply to Patent Owner's Preliminary Response at 5-10;</p> <p>IPR2021-00019/IPR2021-00020 Patent Owner's Consolidated Sur-Reply</p> | | |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|--------------------|--------------------------|--|--|--|--|
| single-node kernel | Claims 1, 26, 29, and 35 | plain and ordinary meaning: program code that can run on one node | <p>In Support Of Its Preliminary Responses at 6-9;</p> <p>IPR2021-00019 Denial of Institution of IPR at 5-6, 12-14, 19-23, 29-30;</p> <p>IPR2021-00020 Petition for IPR at 1, 5, 19-20, 22-26, 28-49, 51-67, 72, 76-77;</p> <p>IPR2021-00020 Patent Owner's Preliminary Response at 1-2, 10-12, 14, 21, 25, 31, 33-46;</p> <p>IPR2021-00020 Denial of Institution of IPR at 5-7, 13-15, 20-24, 28.</p> | <p>a kernel that is designed to communicate with and run on only a single node</p> | <p>'768 patent at 1:22-29, 1:37-43, 2:18-21, 2:58-3:2, 3:13-26, 4:58-62, 29:66-30:1, 30:28-32.</p> <p>See <i>also</i> intrinsic evidence for "kernel".</p> |
| | | | <p>U.S. Patent No. 10,333,768 at col. 1, ll. 22-28, col. 1, ll. 37-43, col. 1, ll. 44-62, col. 2, ll. 18-24, col. 2, l. 58-col. 3, l. 2-4, 13-26, col. 4, ll. 14-18, 58-62, col. 3, ll. 13-26, col. 29, l. 66-col. 30, l. 4, claims 1-39.</p> <p>File History for U.S.</p> | | |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|------------|----------|-----------------------------|--|--------------------------------|-----------------------------|
| | | | <p>Patent No. 10,333,768 at 2014-09-08 Claims at 2; 2016-07-20 Non-Final Rejection at 4, 7-8, 14-17; 2016-11-16 Miscellaneous Internal Document at 1-2; 2016-11-21 Claims at 2-6; 2017-03-09 Final Rejection at 5-18; 2017-08-08 Claims at 2-7; 2017-08-08 Applicant Arguments/Remarks Made in an Amendment at 10; 2017-08-08 Miscellaneous Internal Document at 1-2; 2017-08-08 Applicant Initiated Interview Summary at 2; 2018-04-13 Non-Final Rejection at 5, 7, 10-18, 21-24, 26, 29; 2018-05-22 Miscellaneous Internal Document at 1-2; 2018-05-22 Applicant Initiated Interview Summary at 1; 2018-05-22 Examiner Initiated Interview Summary at 2; 2018-10-05 Claims at 2-</p> | | |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|------------|----------|-----------------------------|--|--------------------------------|-----------------------------|
| | | | <p>10; 2018-11-29 Notice of Allowance and Fees Due at 3-12.</p> <p>IPR2021-00019 Petition for IPR at 1, 5-6, 16-37, 40-44, 47, 49-56, 58-60, 62-69, 71-77;</p> <p>IPR2021-00019 Patent Owner's Preliminary Response at 1, 10-11, 15, 22, 32, 34-47;</p> <p>IPR2021-00019-00019/IPR2021-00020 Petitioners Reply to Patent Owner's Preliminary Response at 5-10;</p> <p>IPR2021-00019/IPR2021-00020 Patent Owner's Consolidated Sur-Reply In Support Of Its Preliminary Responses at 6-9;</p> <p>IPR2021-00019 Denial of Institution of IPR at 5-6, 12-14, 19-23, 29-30;</p> <p>IPR2021-00020 Petition</p> | | |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|--|------------------|--|---|---|--|
| a mechanism for the nodes to communicate results of mathematical expression evaluation with each other using a peer-to-peer architecture (Claim 1) | Claims 1, 29, 35 | Not subject to 35 U.S.C. § 112 ¶ 6; no construction necessary. Should the Court determine that these terms require construction: hardware and/or software modules that support internode communication using a peer-to-peer architecture | for IPR at 1, 5, 19-20, 22-26, 28-49, 51-67, 72, 76-77; IPR2021-00020 Patent Owner's Preliminary Response at 1-2, 10-12, 14, 21, 25, 31, 33-46; IPR2021-00020 Denial of Institution of IPR at 5-7, 13-15, 20-24, 28. | Subject to § 112 ¶ (6) Function: “communicate results of mathematical expression evaluation with each other (claim 29) [using a peer-to-peer architecture] (claim 1); “communicate results of evaluation with other computer cluster nodes using a peer-to-peer architecture” (claim 35) Structure (for claims 1, 29, 35): Message- | '768 patent at 6:3-8, 6:19-29, 11:42-54, 12:41-53, 13:10-15:9, 21:63-22:24, 24:58-67, 25:9-47, Figure 3. |
| a mechanism for the nodes to communicate results of mathematical expression evaluation with each other | | Should the Court determine that § 112, ¶ 6 applies: | U.S. Patent No. 10,333,768 at col. 3, ll. 46-49, col. 5, l. 56-col. 6, l. 13, 22-25, col. 11, ll. 42-45, col. 13, l. 9-col. 14, l. 28, col. 14, ll. 36-43, col. 12, l. 33-col. 21, l. 10, col. 21, l. 63-col. 22, l. 24, col. 23, ll. 51-52, col. 24, l. 24-col. 25, l. 47, col. 26, ll. 9-32, FIG. 2, FIG. 3, FIG. 5, Table D, cls. 1-25, 30-35. File History for U.S. Patent No. 10,333,768 at 2014-09-08 Preliminary Amendment at 2; 2016-07-20 Non-Final | | |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|---|----------|---|--|--|-----------------------------|
| <p>(Claim 29) a mechanism to communicate results of evaluation with other computer cluster nodes using a peer-to-peer architecture (Claim 35)</p> | | <p>Function: communicate results of mathematical expression evaluation and user instructions between nodes</p> <p>Structure: messaging modules that support communication using a peer-to-peer architecture</p> | <p>Rejection at 3-14; 2016-11-16 Applicant Initiated Interview Summary; 2016-11-16 Miscellaneous Internal Document; 2016-11-21 Claims at 2, 4-6; 2016-11-21 Applicant Arguments/Remarks Made in an Amendment at 8-9; 2017-03-09 Final Rejection at 3-6, 8, 13-15; 2017-08-08 Applicant Arguments/Remarks Made in an Amendment at 10-11; 2017-08-08 Miscellaneous Internal Document at 1; 2017-08-08 Applicant Initiated Interview Summary; 2018-04-13 Non-Final Rejection at 4-5, 7, 10, 15, 17-18; 2018-11-29 Issue Information including classification, examiner, name, claim renumbering etc. at 3. IPR2021-00019 Petition for IPR at 14, 28-32, 49-</p> | <p>Passing Interface ("MPI") module 302, RMQ received message queue 306 and MRQ message receiving queue 308 configured to execute the process described at 25:29-43.</p> | |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|------------|----------|-----------------------------|---|--------------------------------|-----------------------------|
| | | | <p>52, 57, 61, 64-70, 75-76, Declaration of Henry Tufo at 2-5, 24, 40; IPR2021-00019 Patent Owner's Preliminary Response at 1-3, 6-8, 20-26, 28, 30, 32, 42-47, 49-52; IPR2021-00019/IPR2021-00020 Petitioners Reply to Patent Owner's Preliminary Response; IPR2021-00019 Denial of Institution of IPR at 10-11, 14-15, 21-22, 21 n. 16; IPR2021-00020 Petition for IPR at 16-17, 28-34, 51-53, 60, 64-66, 73, Declaration of Henry Tufo at 1-5, 25, 77; IPR2021-00020 Patent Owner's Preliminary Response at 1-3, 6-12, 20-28, 30, 32, 42-46, 48-50; IPR2021-00020 Denial of Institution of IPR at 10-12, 15-16, 21-22, 21 n. 20.</p> | | |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|--|-----------------|--|--|---|---|
| <p>a mechanism for the nodes to communicate results of mathematical expression evaluation with each other using asynchronous calls</p> | <p>Claim 26</p> | <p>Not subject to 35 U.S.C. § 112 ¶ 6; no construction necessary.</p> <p>Should the Court determine that these terms require construction: hardware and/or software modules that support asynchronous internode communication using a peer-to-peer architecture</p> <p>Should the Court determine that § 112, ¶ 6 applies:</p> <p>Function: communicate results of mathematical expression evaluation and user instructions between nodes</p> <p>Structure: messaging modules that support</p> | <p>U.S. Patent No. 10,333,768 at col. 3, ll. 46-49, col. 5, l. 56-col. 6, l. 13, 19- 25, col. 11, ll. 42-45, col. 13, l. 9-col. 14, l. 43, col. 12, l. 33-col. 21, l. 10, col. 21, l. 63-col. 22, l. 24, col. 23, ll. 51-52, col. 24, l. 24-col. 25, l. 47, col. 26, ll. 9-32, col. 27, ll. 38-43, FIG. 2, FIG. 3, FIG. 5, Table C, Table D, cls. 1-28, 30-35.</p> <p>File History for U.S. Patent No. 10,333,768 at 2014-09-08 Preliminary Amendment at 2; 2016-07-20 Non-Final Rejection at 3-14; 2016-11-16 Applicant Initiated Interview Summary; 2016-11-16 Miscellaneous Internal Document; 2016-11-21 Claims at 2, 4-6; 2016-11-21 Applicant Arguments/Remarks Made in an Amendment at 8-9; 2017-03-09 Final Rejection at 3-6, 8, 10-</p> | <p>Subject to § 112 ¶ (6)</p> <p>Function: “communicate results of mathematical expression evaluation with each other using asynchronous calls”</p> <p>Structure: Message-Passing Interface (“MPI”) module 302, including mpiSend, mpiRecv, and mpiTest commands as described at 14:1-28, RMQ received message queue 306 and MRQ message receiving queue 308 configured to execute the process described at 25:29-43.</p> | <p>’768 patent at 6:3-8, 6:19-29, 11:42-54, 12:41-53, 13:10-15:9, 21:63-22:24, 24:58-67, 25:9-47, 27:39-48, Figure 3.</p> |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|------------|----------|---|---|--------------------------------|-----------------------------|
| | | <p>asynchronous communication using a peer-to-peer architecture</p> | <p>17; 2017-08-08 Claims at 5; 2017-08-08 Applicant Arguments/Remarks Made in an Amendment at 10-11; 2017-08-08 Miscellaneous Internal Document at 1; 2017-08-08 Applicant Initiated Interview Summary; 2018-04-13 Non-Final Rejection at 4-5, 7, 10, 13-15, 17-18, 20-22, 25-26. IPR2021-00019 Petition for IPR at 1-2, 14, 28-32, 49-52, 57, 61, 64-78, Declaration of Henry Tufo at 2-5, 24, 40; IPR2021-00019 Patent Owner's Preliminary Response at 1-3, 6-8, 20-26, 28, 30, 32, 34-37, 42-47, 49-52; IPR2021-00019/IPR2021-00020 Petitioners Reply to Patent Owner's Preliminary Response; IPR2021-00019 Denial</p> | | |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|---|-----------------------------|--|---|--|---|
| <p>wherein the third node comprises a third hardware processor with a plurality of processing cores, wherein the third node is configured to receive the result of the first mathematical expression evaluation from the second node,</p> | <p>Claims 1, 26, and 29</p> | <p>plain and ordinary meaning: wherein the third node comprises a third hardware processor with a plurality of processing cores, wherein the third node is configured to receive the result of the first mathematical expression evaluation from the second node,</p> | <p>of Institution of IPR at 10-11, 14-15, 21-22, 21 n. 16; IPR2021-00020 Petition for IPR at 16-17, 28-34, 51-53, 60, 64-67, 73, Declaration of Henry Tufo at 1-5, 25, 77; IPR2021-00020 Patent Owner's Preliminary Response at 1-3, 6-12, 20-28, 30, 33-46, 48-50; IPR2021-00020 Denial of Institution of IPR at 10-12, 15-16, 21-22, 21 n. 20.</p> | <p>This limitation requires a precise order of operations involving three specific nodes: (1) the third node receives, from the second node, a result of a calculation that was performed by the second node in a different claim limitation; (2) the third node performs a different calculation</p> | <p>IPR2021-00019, Paper 5 at 26-27. IPR2021-00020, Paper 5 at 18-19.</p> |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|--|----------|--|---|---|-----------------------------|
| <p>execute at least a second mathematical expression evaluation using the received result, and communicate the result of the second mathematical expression evaluation to the first node</p> | | <p>execute at least a second mathematical expression evaluation using the received result, and communicate the result of the second mathematical expression evaluation to the first node</p> | <p>Made in an Amendment at 13-14; 2018-10-05 Claims at 10; 2018-11-29 Examiner Initiated Interview Summary; 2018-11-29 Notice of Allowance at 11-12; 2018-11-29 Index of Claims. IPR2021-00019 Petition for IPR at 38, 41-47; IPR2021-00019 Patent Owner's Preliminary Response at 26-29, 44-47, Singh Declaration at 21, 23, 34; IPR2021-00019 Denial of Institution of IPR at 17-18, 23-30; IPR2021-00020 Petition for IPR at 41-50, 63-64; IPR2021-00020 Patent Owner's Preliminary Response at 18-21, 43-45, Singh Declaration at 26; IPR2021-00020 Denial of Institution of IPR at</p> | <p>based on the received result; and (3) the third node sends the new result to the first node.</p> | |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
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| node/nodes | Claims 1, 4, 7, 8, 10, 18-22, 24-27, 29-31, 33- 37, 39 | <p>No construction necessary.</p> <p>Should the Court determine that these terms require construction:</p> <p>Computing device[s] (e.g., computer[s], microprocessor[s], special purpose microprocessor[s], and/or processor core[s]) that can intercommunicate with other nodes</p> | <p>18, 24-29, 30-31.</p> <p>U.S. Patent No. 10,333,768 at Abstract, col. 1, ll. 18-22, col. 1, ll. 37-41, col. 1, ll. 47-48, col. 1, ll. 52-62, col. 2, ll. 4-28, col. 2, ll. 18-21, col. 2, ll. 58-61, col. 3, ll. 13-26, col. 4, ll. 36-62, col. 5, ll. 33-55, col. 6, ll. 10-38, col. 7, ll. 10-32, col. 8, ll. 29-49, col. 9, ll. 59-67, col. 12, ll. 33-40, col. 12, ll. 55-60, col. 13, ll. 17-24, col. 6, ll. 41-47, col. 14, ll. 36-43, col. 15, ll. 10-17, col. 15, ll. 52-59, col. 17, ll. 12-8, col. 6, ll. 10-38, col. 18, ll. 35-48, col. 19, ll. 2-13, col. 20, ll. 2-14, col. 22, ll. 38-48, FIGS. 1-5, claims 1-39.</p> <p>IPR2021-00019 Patent Owner's Preliminary Response at 11-13, 20-26, Declaration of Henry Tufo at 24, 27, 51-52; IPR2021-00020 Patent</p> | <p>a processing unit or subunit that is capable of single-threaded execution of code</p> | <p>'768 patent: col 1: lines 19-28, 4:45-47, 4:63-5:35, 5:56-6:6, 7:1-32, 8:29-49, 9:48-67, 11:15-39, Figs. 1-3.</p> |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|---|---------------------------------|-----------------------------------|---|---|--|
| <p>each of the nodes is configured to access a non-transitory computer readable medium comprising program code for a single-node kernel (Claims 1, 26, 29)</p> <p>a hardware processor configured to access one or more non-transitory memory devices comprising program code for a single-node kernel (Claim 35)</p> | <p>Claims 1, 26, 29, and 35</p> | <p>plain and ordinary meaning</p> | <p>Owner's Preliminary Response at 2. Declaration of Henry Tufo at 24-25.</p> <p>U.S. Patent No. 10,333,768 at Abstract, col. 1, ll. 19-28, col. 1, ll. 37-41, col. 2, ll. 18-21, col. 2, ll. 34-43, col. 2, ll. 45-54, col. 3, ll. 14-24, col. 3, ll. 46-49, col. 4, ll. 58-62, col. 5, ll. 11-13, col. 5, ll. 18-20, col. 5, l. 64-col. 6, l. 2, col. 5, ll. 64-67, col. 23, ll. 5-7, col. 2, ll. 21-24; col. 11, ll. 15 18, col. 11, ll. 65-66, cls. 1, 5, 18-29, 31-35, 37-38.</p> <p>File History for U.S. Patent No. 10,333,768 at 2014-09-08 Preliminary Amendment at 2; 2016-07-20 Non-Final Rejection at 4-7, 2016-11-16 Miscellaneous Internal Document at 1-2; 2016-11-16 Applicant Initiated Interview Summary at 1; 2016-11-21 Amendment/Request for</p> | <p>“each of the nodes is programmed to access a non-transitory computer-readable medium storing program code for a single-node kernel” (Claims 1, 26, 29)</p> <p>“a hardware processor programmed to access one or more non-transitory memory devices storing program code for a single-node kernel” (Claim 35)</p> | <p>'768 patent, 2018.04.13 Office Action; '768 patent, 2017.03.09 Office Action; '768 patent, 2018.10.05 Applicant Response; '768 patent, at Abstract, 2:30-62, 3:14-24, 3:46-50, 4:45-58, 5:6-9, 5:64-6:2, 7:23-27, 7:46-58, 8:38-44, 8:63-9:8, 9:59-63, 10:14-26, 23:5-7, Claims 1-39, Figures 1-2; IPR2021-00020 Patent Owner's Preliminary Response; IPR2021-00020, Ex. 2001 (Singh Declaration); IPR2021-00020, Ex. 2030 (Dauger Declaration); IPR2021-00020, Ex. 2031 (SEM Claim</p> |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
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| | | | <p>Reconsideration at 2-6 (claims), 8-9 (remarks); 2017-03-09 Final Rejection at 2, 6-8, 10-17; 2017-08-08 Amendment at 2, 4-8 (claims), 10-11 (remarks); 2017-08-08 Miscellaneous Internal Document at 1-3; 2017-08-08 Applicant Initiated Interview Summary at 1; 2018-04-13 Non-Final Rejection at 6-8, 10, 12-26; 2018-05-22 Miscellaneous Internal Document at 1-2; 2018-05-22 Applicant Initiated Interview Summary at 1; 2018-05-22 Applicant Initiated Interview Summary at 1; 2018-10-21 Amendment/Request for Reconsideration at 2-10 (claims), 12 (summary of interview), 13-14 (remarks); 2018-11-29 Examiner Initiated Interview Summary at 2; 2018-11-29 Notice of Allowance at 2-13</p> | | <p>Chart); IPR2021-00020, Ex. 2032 (SET Claim Chart); IPR2021-00020 Institution Decision; IPR2021-00019 Patent Owner's Preliminary Response; IPR2021-00019, Ex. 2001 (Singh Declaration); IPR2021-00019, Ex. 2027 (Dauger Declaration); IPR2021-00019, Ex. 2028 (SEM Claim Chart); IPR2021-00019, Ex. 2029 (SET Claim Chart); IPR2021-00019 Institution Decision; and U.S. Patent No. 8,676,877, Claims 1-14.</p> |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
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| | | | (claims), 13 (reason for allowance). IPR2021-00019 Petition for IPR at 14, 38-50, 68-69; IPR2021-00019 Declaration of Henry Tufo at 24; IPR2021-00019 Patent Owner's Preliminary Response at 6-16, 26-29; IPR2021-00019 Denial of Institution of IPR at 10-11, 24-30; IPR2021-00020 Petition for IPR at 16-17, 41-50, 56-58, 61-65; IPR2021-00020 Declaration of Henry Tufo at 24-25; IPR2021-00020 Patent Owner's Preliminary Response at 6-15, 18-21; IPR2021-00020 Denial of Institution of IPR at 10-12, 25-31. | | |
| Claim Terms Identified By Both Parties | | | | | |
| communicate a result of the second mathematical | Claim 35 | communicate a result of the second mathematical | U.S. Patent No. 10,333,768 at col. 3, ll. 39-55, col. 5, l. 56-col. 6, l. 25, col. 22, l. 48- | Indefinite; lacks antecedent basis. | '768 patent at 6:9-29, 35:9-36:4, FIG. 2, claim 35. |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
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| <p>expression evaluation to the first node/ "the first node"</p> | | <p>expression evaluation to the second node</p> | <p>col. 23, l. 7, FIG. 2, claims 1-39. File History for U.S. Patent No. 10,333,768 at 2017-08-08 Claims at 7-8; 2018-04-13 Non-Final Rejection at 26; 2018-10-05 Applicant Arguments/Remarks Made in an Amendment at 12-14; 2018-10-05 Claims at 10; 2018-11-29 Examiner Initiated Interview Summary; 2018-11-29 Notice of Allowance at 11-12; 2018-11-29 Index of Claims. IPR2021-00019 Petition for IPR at 38, 41-47; IPR2021-00019 Patent Owner's Preliminary Response at 26-29, 44-47; IPR2021-00019 Denial of Institution of IPR at 17-18, 23-30; IPR2021-00020 Petition for IPR at 41-50, 63-64,</p> | | <p>11/29/2018 Notice of Allowability and Examiner Amendment at 12. 11/21/2018 Examiner-Initiated Interview Summary 02/14/2014 Amendment at 10.</p> |

| Claim Term | Claim(s) | ACS's Proposed Construction | ACS's Intrinsic Evidence | NVIDIA's Proposed Construction | NVIDIA's Intrinsic Evidence |
|------------|----------|-----------------------------|--|--------------------------------|-----------------------------|
| | | | Declaration of Henry Tufo at 1-5, 80; IPR2021-00020 Patent Owner's Preliminary Response at 18-21, 43-45; IPR2021-00020 Denial of Institution of IPR at 18, 24-29, 30-31. | | |