

# Exhibit 2

**BEDROCK COMPUTER TECHS., LLC V. SOFTLAYER TECH. SOLUTIONS, LLC, ET. AL**  
 PLAINTIFF’S P.R. 3-1 INFRINGEMENT CONTENTIONS<sup>1</sup>

	Claim Language	Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11
1.	An information storage and retrieval system, the system comprising:	<p>Bedrock Computer Technologies LLC (“Bedrock”) does not express a position at this time as to whether the preamble of this claim limits the claim’s scope. Nevertheless, Bedrock identifies below aspects of the Accused Instrumentalities that correspond to the claim preamble.</p> <p>When Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) a system that is especially adapted for information storage and retrieval.</p> <p>In the event this preamble is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this preamble and the aforementioned features of the</p>

<sup>1</sup> The contentions contained in this chart are based on functionality observable through the open source versions of Linux that are publicly available. **All of the limitations of the asserted claims of the ’120 patent include features that relate to software of the Accused Instrumentalities. The actual source code of Linux that is installed on Google servers and other device(s) is not publicly available and has not yet been produced for inspection. Bedrock reserves the right to supplement or modify these contentions once Google has produced this code and Bedrock has completed its review of the source code.**

Bedrock’s identification of specific routines is not intended to identify all of the code necessary to satisfy the claim limitation at issue. Other source and/or object code components, such as routines, functions, methods, macros, classes, data structures, libraries etc. may be necessary. Furthermore, these identified code components may be called by or call other code components. Also, the code components identified are normally the first or the most relevant in a series of code components and are intended to reference the entire function path. Bedrock reserves its right to provide additional detail in its expert report according to the schedule set by the Court.

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.
(a) <sup>2</sup>	a linked list to store and provide access to records stored in a memory of the system, at least some of the records automatically expiring,	<p>When Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) a system that is especially adapted to include a linked list to store and provide access to records stored in a memory of the system, at least some of the records automatically expiring.</p> <p>Within Linux kernel version 2.6.11, the data structure <code>rt_hash_table</code> in module <code>/net/ipv4/route.c</code><sup>3</sup> anchors one or more linked list(s) to store and provide access to records stored in a memory of the system, at least some of the records automatically expiring. In this way, computer equipment configured with or utilizing software based on 2.6.11 includes a linked list to store and provide access to records stored in a memory of the system, at least some of the records automatically expiring.</p> <p>The following code excerpts from the files <code>/net/ipv4/route.c</code> and <code>/include/net/route.h</code> show the C language definition for the data structure <code>rt_hash_table</code> and the <code>rtable</code> struct definition used by <code>rt_hash_table</code>:</p> <pre>struct rt_hash_bucket {</pre>

<sup>2</sup> While the limitations are not lettered in the actual claims of the patent, Bedrock provides them here for ease of reference.

<sup>3</sup> The path names of the cited source code is provided for the defendants' convenience. If any version or customization of Linux kernel version 2.6.11 deviates from the path names that are cited in these charts, such deviations are insignificant because it is the routines, functions, methods, macros, classes, data structures, etc., as embodied on servers and other devices, that infringe.

	Claim Language	Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11
		<pre> struct rtable    *chain; spinlock_t      lock; } __attribute__((__aligned__(8)));  static struct rt_hash_bucket  *rt_hash_table;  ****  struct rtable {     union     {         struct dst_entry      dst;         struct rtable         *rt_next;     } u;      struct in_device          *idev;      unsigned                  rt_flags;     unsigned                  rt_type;      __u32                     rt_dst; /* Path destination */     __u32                     rt_src; /* Path source */     int                       rt_iif;      /* Info on neighbour */     __u32                     rt_gateway;      /* Cache lookup keys */     struct flowi              fl; </pre>

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		<pre data-bbox="856 342 1751 451">/* Miscellaneous cached information */ __u32          rt_spec_dst; /* RFC1122 specific destination */ struct inet_peer *peer; /* long-living peer info */ };</pre> <p data-bbox="760 526 1780 557">Source: Linux kernel source code files /net/ipv4/route.c and /include/net/route.h</p> <p data-bbox="760 602 1892 883">In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
(b)	a record search means utilizing a search key to access the linked list,	<p data-bbox="760 932 1892 1105">When Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) a system that is especially adapted to include a record search means utilizing a search key to access the linked list or its equivalent.</p> <p data-bbox="760 1149 1892 1323">Specifically, code contained within functions ip_route_input_mc, ip_route_input_slow, ip_rt_redirect, and/or ip_route_output_slow in module /net/ipv4/route.c calls functions rt_hash and rt_intern_hash. In this way, computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 includes a record search means utilizing a search key to access the linked list or its equivalent.</p> <p data-bbox="760 1367 1892 1399">In the event this limitation is construed so as to be not literally present in the Accused</p>

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		<p>Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
(c)	<p>the record search means including a means for identifying and removing at least some of the expired ones of the records from the linked list when the linked list is accessed, and</p>	<p>When Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) a system that is especially adapted to include a record search means, the record search means including a means for identifying and removing at least some of the expired ones of the records from the linked list when the linked list is accessed or its equivalent.</p> <p>Specifically, code contained within function <code>rt_intern_hash</code>, as invoked by functions <code>ip_route_input_mc</code>, <code>ip_route_input_slow</code>, <code>ip_rt_redirect</code>, and/or <code>ip_route_output_slow</code> in module <code>/net/ipv4/route.c</code>, comprises record search means including a means for identifying and removing at least some of the expired ones of the records from the linked list when the linked list is accessed or its equivalent.</p> <p>The following code excerpt from the <code>rt_intern_hash</code> function is an example of a record search means which includes a means for identifying and removing at least some of the expired ones of the records from the linked list when the linked list is accessed or its equivalent:</p> <pre> rthp = &amp;rt_hash_table[hash].chain;  spin_lock_bh(&amp;rt_hash_table[hash].lock); </pre>

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		<pre> while ((rth = *rthp) != NULL) {      if (compare_keys(&amp;rth-&gt;fl, &amp;rt-&gt;fl)) { ****          if (!atomic_read(&amp;rth-&gt;u.dst.__refcnt)) {             u32 score = rt_score(rth);              if (score &lt;= min_score) {                 cand = rth;                 candp = rthp;                 min_score = score;             }         } ****          chain_length++;          rthp = &amp;rth-&gt;u.rt_next;     } ****      if (cand) {         /* ip_rt_gc_elasticity used to be average length of chain         * length, when exceeded gc becomes really aggressive. </pre>

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		<pre data-bbox="945 308 1701 633"> * * The second limit is less certain. At the moment it allows * only 2 entries per bucket. We will see. */ if (chain_length &gt; ip_rt_gc_elasticity) {     *candp = cand-&gt;u.rt_next;     rt_free(cand); } } </pre> <p data-bbox="756 673 1459 706">Source: Linux kernel source code file /net/ipv4/route.c</p> <p data-bbox="756 747 1890 812">Note that the record(s) identified as expired upon traversal of the linked list is not necessarily the record that rt_intern_hash was called to find.</p> <p data-bbox="756 852 1890 1144">In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
(d)	means, utilizing the record search means, for accessing the linked list and, at the same time, removing at least some of the expired ones of the records in the linked list.	When Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) a system that is especially adapted to include means, utilizing the record search means, for accessing the linked list and, at the same time, removing at least some of the expired ones of the records in the linked list or its



	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		<p>equivalent.</p> <p>Specifically, the functions <code>ip_route_input_mc</code>, <code>ip_route_input_slow</code>, <code>ip_rt_redirect</code>, and/or <code>ip_route_output_slow</code> in module <code>/net/ipv4/route.c</code>. include means, utilizing the record search means, for accessing the linked list and, at the same time, removing at least some of the expired ones of the records in the linked list or its equivalent.</p> <p>The following code excerpt is one example of the <code>rt_hash</code> and <code>rt_intern_hash</code> functions being called by the function <code>ip_route_input_mc</code>:</p> <pre> hash = rt_hash_code(daddr, saddr ^ (dev-&gt;ifindex &lt;&lt; 5), tos); return rt_intern_hash(hash, rth, (struct rtable**) &amp;skb-&gt;dst); </pre> <p>Source: Linux kernel source code file <code>/net/ipv4/route.c</code></p> <p>In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
2.	The information storage and retrieval system according to claim 1 further including means for dynamically determining maximum number for the record search means to remove in the	When Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) a system that is especially adapted to include means for dynamically determining maximum number for the record search means to remove in the accessed linked list of records or its equivalent.

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	accessed linked list of records.	<p>Specifically, code contained within function <code>rt_intern_hash</code>, in module <code>/net/ipv4/route.c</code>, dynamically executes based upon comparison with variable <code>ip_rt_gc_elasticity</code>. In this way, computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 includes means for dynamically determining maximum number for the record search means to remove in the accessed linked list of records or its equivalent.</p> <p>The following code excerpt from the <code>rt_intern_hash</code> functions is an example of the variable <code>ip_rt_gc_elasticity</code> being used for dynamically determining maximum number for the record search means to remove in the accessed linked list of records or its equivalent:</p> <pre> if (cand) {     /* ip_rt_gc_elasticity used to be average length of chain     * length, when exceeded gc becomes really aggressive.     *     * The second limit is less certain. At the moment it allows     * only 2 entries per bucket. We will see.     */     if (chain_length &gt; ip_rt_gc_elasticity) {         *candp = cand-&gt;u.rt_next;         rt_free(cand);     } } </pre> <p>Source: Linux kernel source code file <code>/net/ipv4/route.c</code></p> <p>In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because</p>

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		any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.
3.	A method for storing and retrieving information records using a linked list to store and provide access to the records, at least some of the records automatically expiring, the method comprising the steps of:	<p>Bedrock does not express a position at this time as to whether the preamble of this claim limits the claim's scope. Nevertheless, Bedrock identifies below aspects of the Accused Instrumentalities that correspond to the claim preamble.</p> <p>When Google uses (or induces or contributes to others' use of) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google practices (or induces or contributes to others' practice of) a method for storing and retrieving information records that uses a linked list to store and provide access to the records, where at least some of the records are automatically expiring. Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 is especially adapted to store and retrieve information records using a linked list to store and provide access to the records, where at least some of the records are automatically expiring.</p> <p>In the event this preamble is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this preamble and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
(a)	accessing the linked list of records,	When Google uses (or induces or contributes to others' use of) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google

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		<p>practices (or induces or contributes to others' practice of) a method that includes the step of accessing the linked list of records. Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 is especially adapted to access a linked list of records.</p> <p>Specifically, the data structure <code>rt_hash_table</code> in module <code>/net/ipv4/route.c</code> is used to access the linked list of records. Additionally, code contained within the function <code>rt_intern_hash</code> in module <code>/net/ipv4/route.c</code> is also used to access the linked list of records.</p> <p>The following code excerpt from the <code>rt_intern_hash</code> function is an example of accessing the linked list of records:</p> <pre> rthp = &amp;rt_hash_table[hash].chain;  spin_lock_bh(&amp;rt_hash_table[hash].lock); while ((rth = *rthp) != NULL) { ****      chain_length++;      rthp = &amp;rth-&gt;u.rt_next; } </pre> <p>Source: Linux kernel source code file <code>/net/ipv4/route.c</code></p> <p>In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because</p>

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.
(b)	identifying at least some of the automatically expired ones of the records, and	<p>When Google uses (or induces or contributes to others' use of) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google practices (or induces or contributes to others' practice of) a method that includes the step of identifying at least some of the automatically expired ones of the records. Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 is especially adapted to identify at least some of the automatically expired ones of the records.</p> <p>Specifically, code contained within or accessed by the function <code>rt_intern_hash</code> in module <code>/net/ipv4/route.c</code> is used to practice a method that includes the step of identifying at least some of the automatically expired ones of the records.</p> <p>The following code excerpt from the <code>rt_intern_hash</code> function is an example of identifying at least some of the automatically expired ones of the records:</p> <pre> if (!atomic_read(&amp;rth-&gt;u.dst.__refcnt)) {     u32 score = rt_score(rth);      if (score &lt;= min_score) {         cand = rth;         candp = rthp;         min_score = score;     } } </pre>

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		<p>Source: Linux kernel source code file /net/ipv4/route.c</p> <p>In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
(c)	<p>removing at least some of the automatically expired records from the linked list when the linked list is accessed.</p>	<p>When Google uses (or induces or contributes to others' use of) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google practices (or induces or contributes to others' practice of) a method that includes the step of removing at least some of the automatically expired records from the linked list when the linked list is accessed. Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 is especially adapted to remove at least some of the automatically expired records from the linked list when the linked list is accessed.</p> <p>Specifically, code contained within the function <code>rt_intern_hash</code> in module <code>/net/ipv4/route.c</code> is used to practice a method that includes the step of removing at least some of the automatically expired records from the linked list when the linked list is accessed.</p> <p>The following code excerpt from the <code>rt_intern_hash</code> function is an example of removing at least some of the automatically expired records from the linked list when the linked list is accessed:</p> <pre> if (cand) { </pre>

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		<pre data-bbox="947 310 1703 704"> /* ip_rt_gc_elasticity used to be average length of chain  * length, when exceeded gc becomes really aggressive.  *  * The second limit is less certain. At the moment it allows  * only 2 entries per bucket. We will see.  */ if (chain_length &gt; ip_rt_gc_elasticity) {     *candp = cand-&gt;u.rt_next;     rt_free(cand); } } </pre> <p data-bbox="758 748 1457 776">Source: Linux kernel source code file /net/ipv4/route.c</p> <p data-bbox="758 821 1896 1105">In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
4.	The method according to claim 3 further including the step of dynamically determining maximum number of expired ones of the records to remove when the linked list is accessed.	<p data-bbox="758 1154 1892 1328">When Google uses (or induces or contributes to others' use of) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google practices (or induces or contributes to others' practice of) a method that includes the step of dynamically determining maximum number of expired ones of the records to remove when the linked list is accessed.</p> <p data-bbox="758 1373 1892 1401">Specifically, code contained within function <code>rt_intern_hash</code> (in module /net/ipv4/route.c)</p>

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		<p>that dynamically executes based upon comparison with variable ip_rt_gc_elasticity is used to perform the claimed act(s). In this way, computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 practices a method that includes the step of dynamically determining maximum number of expired ones of the records to remove when the linked list is accessed. Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 is especially adapted to dynamically determine maximum number of expired ones of the records to remove when the linked list is accessed.</p> <p>The following code excerpt from the rt_intern_hash function is an example of dynamically determining the maximum number of expired ones of the records to remove when the linked list is accessed:</p> <pre> if (cand) {     /* ip_rt_gc_elasticity used to be average length of chain     * length, when exceeded gc becomes really aggressive.     *     * The second limit is less certain. At the moment it allows     * only 2 entries per bucket. We will see.     */     if (chain_length &gt; ip_rt_gc_elasticity) {         *candp = cand-&gt;u.rt_next;         rt_free(cand);     } } </pre> <p>Source: Linux kernel source code file /net/ipv4/route.c</p> <p>In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused</p>



	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.
5.	An information storage and retrieval system, the system comprising:	<p>Bedrock Computer Technologies LLC (“Bedrock”) does not express a position at this time as to whether the preamble of this claim limits the claim’s scope. Nevertheless, Bedrock identifies below aspects of the Accused Instrumentalities that correspond to the claim preamble.</p> <p>When Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) a system that is especially adapted for information storage and retrieval.</p> <p>In the event this preamble is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this preamble and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
(a)	a hashing means to provide access to records stored in a memory of the system and using an external chaining technique to	When Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) a system that is especially adapted to include a

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	store the records with same hash address, at least some of the records automatically expiring,	<p>hashing means to provide access to records stored in a memory of the system and using an external chaining technique to store the records with same hash address, where at least some of the records are automatically expiring or its equivalent.</p> <p>Specifically, data structure <code>rt_hash_table</code> in module <code>/net/ipv4/route.c</code> implements a hashing means to provide access to records stored in a memory of the system and using an external chaining technique to store the records with same hash address, where at least some of the records automatically are expiring or its equivalent.</p> <p>The following code excerpts from the files <code>/net/ipv4/route.c</code> and <code>/include/net/route.h</code> show the C language definition for the data structure <code>rt_hash_table</code> and the <code>rtable</code> struct definition used by <code>rt_hash_table</code>:</p> <pre> struct rt_hash_bucket {     struct rtable    *chain;     spinlock_t      lock; } __attribute__((__aligned__(8)));  static struct rt_hash_bucket  *rt_hash_table;  ****  struct rtable {     union     {         struct dst_entry      dst;         struct rtable        *rt_next;     } u; </pre>

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		<pre> struct in_device      *idev;  unsigned              rt_flags; unsigned              rt_type;  __u32                 rt_dst; /* Path destination */ __u32                 rt_src; /* Path source */ int                   rt_iif;  /* Info on neighbour */ __u32                 rt_gateway;  /* Cache lookup keys */ struct flowi          fl;  /* Miscellaneous cached information */ __u32                 rt_spec_dst; /* RFC1122 specific destination */ struct inet_peer      *peer; /* long-living peer info */ }; </pre> <p>Source: Linux kernel source code files /net/ipv4/route.c and /include/net/route.h</p> <p>Source: Linux kernel source code file /net/ipv4/route.c</p> <p>In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited</p>

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		limitation.
(b)	a record search means utilizing a search key to access a linked list of records having the same hash address,	<p>When Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) a system that is especially adapted to include a record search means utilizing a search key to access a linked list of records having the same hash address or its equivalent.</p> <p>Specifically, code contained within functions ip_route_input_mc, ip_route_input_slow, ip_rt_redirect, and/or ip_route_output_slow in module /net/ipv4/route.c calls functions rt_hash and rt_intern_hash. In this way, computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 includes a record search means utilizing a search key to access a linked list of records having the same hash address or its equivalent.</p> <p>The following code excerpt is one example of the rt_hash and rt_intern_hash functions being called by the function ip_route_input_mc:</p> <pre> hash = rt_hash_code(daddr, saddr ^ (dev-&gt;ifindex &lt;&lt; 5), tos); return rt_intern_hash(hash, rth, (struct rtable**) &amp;skb-&gt;dst); </pre> <p>Source: Linux kernel source code file /net/ipv4/route.c</p> <p>In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function,</p>

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		in substantially the same way, to achieve substantially the same result, as the recited limitation.
(c)	the record search means including means for identifying and removing at least some expired ones of the records from the linked list of records when the linked list is accessed, and	<p>When Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) a system that is especially adapted to include the record search means including means for identifying and removing at least some expired ones of the records from the linked list of records when the linked list is accessed or its equivalent.</p> <p>Specifically, code contained within function <code>rt_intern_hash</code>, as invoked by functions <code>ip_route_input_mc</code>, <code>ip_route_input_slow</code>, <code>ip_rt_redirect</code>, and/or <code>ip_route_output_slow</code> in module <code>/net/ipv4/route.c</code> comprises record search means including means for identifying and removing at least some expired ones of the records from the linked list of records when the linked list is accessed or its equivalent.</p> <p>The following code excerpt from the <code>rt_intern_hash</code> function is an example of a record search means which includes a means for identifying and removing at least some of the expired ones of the records from the linked list when the linked list is accessed:</p> <pre> rthp = &amp;rt_hash_table[hash].chain;  spin_lock_bh(&amp;rt_hash_table[hash].lock); while ((rth = *rthp) != NULL) {      if (compare_keys(&amp;rth-&gt;fl, &amp;rt-&gt;fl)) { </pre> <p>****</p>

	Claim Language	Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11
		<pre> if (!atomic_read(&amp;rth-&gt;u.dst.__refcnt)) {     u32 score = rt_score(rth);      if (score &lt;= min_score) {         cand = rth;         candp = rthp;         min_score = score;     } }  ****  chain_length++;  rthp = &amp;rth-&gt;u.rt_next; }  ****  if (cand) {     /* ip_rt_gc_elasticity used to be average length of chain     * length, when exceeded gc becomes really aggressive.     *     * The second limit is less certain. At the moment it allows     * only 2 entries per bucket. We will see.     */     if (chain_length &gt; ip_rt_gc_elasticity) {         *candp = cand-&gt;u.rt_next;         rt_free(cand); </pre>

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		<pre data-bbox="856 310 968 378"> } } </pre> <p data-bbox="758 418 1457 448">Source: Linux kernel source code file /net/ipv4/route.c</p> <p data-bbox="758 492 1894 557">Note that the record(s) identified as expired upon traversal of the linked list is not necessarily the record that rt_intern_hash was called to find.</p> <p data-bbox="758 600 1894 885">In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
(d)	<p data-bbox="260 930 695 1179">mea[n]s, utilizing the record search means, for inserting, retrieving, and deleting records from the system and, at the same time, removing at least some expired ones of the records in the accessed linked list of records.</p>	<p data-bbox="758 930 1894 1179">When Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) a system that is especially adapted to include means, utilizing the record search means, for inserting, retrieving, and deleting records from the system and, at the same time, removing at least some expired ones of the records in the accessed linked list of records or its equivalent.</p> <p data-bbox="758 1222 1894 1393">Specifically, the functions ip_route_input_mc, ip_route_input_slow, ip_rt_redirect, and/or ip_route_output_slow in module /net/ipv4/route.c include means, utilizing the record search means, for inserting, retrieving, and deleting records from the system and, at the same time, removing at least some expired ones of the records in the accessed linked list of records or its equivalent.</p>

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		<p>For example, the functions ip_rt_redirect, ip_route_input_mc, ip_route_input_slow, and ip_route_output_slow call rt_intern_hash to insert a new entry in rt_hash_table if the entry does not exist, the functions ip_route_input_mc, ip_route_input_slow, and ip_route_output_slow call rt_intern_hash to retrieve an existing entry from rt_hash_table, and the function ip_rt_redirect will delete one or more entries from rt_hash_table.</p> <p>In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
6.	<p>The information storage and retrieval system according to claim 5 further including means for dynamically determining maximum number for the record search means to remove in the accessed linked list of records.</p>	<p>When Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google makes, uses, sells, offers to sell or imports (or actively induces or contributes to same) a system that is especially adapted to include means for dynamically determining maximum number for the record search means to remove in the accessed linked list of records or its equivalent.</p> <p>Specifically, code contained within function rt_intern_hash (in module /net/ipv4/route.c) dynamically executes based upon comparison with variable ip_rt_gc_elasticity. In this way, computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 includes means for dynamically determining maximum number for the record search means to remove in the accessed linked list of records or its equivalent.</p>



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		<p>The following code excerpt from the <code>rt_intern_hash</code> functions is an example of the variable <code>ip_rt_gc_elasticity</code> being used for dynamically determining the maximum number for the record search means to remove in the accessed linked list of records or its equivalent:</p> <pre> if (cand) {     /* ip_rt_gc_elasticity used to be average length of chain     * length, when exceeded gc becomes really aggressive.     *     * The second limit is less certain. At the moment it allows     * only 2 entries per bucket. We will see.     */     if (chain_length &gt; ip_rt_gc_elasticity) {         *candp = cand-&gt;u.rt_next;         rt_free(cand);     } } </pre> <p>Source: Linux kernel source code file <code>/net/ipv4/route.c</code></p> <p>In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
7.	A method for storing and	Bedrock does not express a position at this time as to whether the preamble of this claim

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	<p>retrieving information records using a hashing technique to provide access to the records and using an external chaining technique to store the records with same hash address, at least some of the records automatically expiring, the method comprising the steps of:</p>	<p>limits the claim's scope. Nevertheless, Bedrock identifies below aspects of the Accused Instrumentalities that correspond to the claim preamble.</p> <p>When Google uses (or induces or contributes to others' use of) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google practices (or induces or contributes to others' practice of) a method for storing and retrieving information records using a hashing technique to provide access to the records and using an external chaining technique to store the records with same hash address, at least some of the records automatically expiring. The Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 is especially adapted to store and retrieve information records using a hashing technique to provide access to the records and using an external chaining technique to store the records with same hash address, where at least some of the records automatically expire.</p> <p>In the event this preamble is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this preamble and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
(a)	<p>accessing a linked list of records having same hash address,</p>	<p>When Google uses (or induces or contributes to others' use of) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google practices (or induces or contributes to others' practice of) a method that includes the step of accessing a linked list of records having same hash address. Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 is especially adapted to access a linked list of records having same hash address.</p> <p>Specifically, data structure <code>rt_hash_table</code> in module <code>/net/ipv4/route.c</code> is used to access a</p>

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		<p>linked list of records having the same hash address. Additionally, code contained within the function <code>rt_intern_hash</code> in module <code>/net/ipv4/route.c</code> is also used to access a linked list of records having the same hash address. In this way, computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 practices a method that includes the step of accessing a linked list of records having same hash address.</p> <p>The following code excerpts from the files <code>/net/ipv4/route.c</code> and <code>/include/net/route.h</code> show the C language definition for the data structure <code>rt_hash_table</code> and the <code>rtable</code> struct definition used by <code>rt_hash_table</code>:</p> <pre> struct rt_hash_bucket {     struct rtable    *chain;     spinlock_t      lock; } __attribute__((__aligned__(8)));  static struct rt_hash_bucket  *rt_hash_table;  ****  struct rtable {     union     {         struct dst_entry      dst;         struct rtable         *rt_next;     } u;      struct in_device          *idev;      unsigned                  rt_flags; </pre>

	Claim Language	Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11
		<pre> unsigned          rt_type;  __u32             rt_dst; /* Path destination */ __u32             rt_src; /* Path source */ int              rt_iif;  /* Info on neighbour */ __u32            rt_gateway;  /* Cache lookup keys */ struct flowi     fl;  /* Miscellaneous cached information */ __u32            rt_spec_dst; /* RFC1122 specific destination */ struct inet_peer *peer; /* long-living peer info */ };  Source: Linux kernel source code files /net/ipv4/route.c and /include/net/route.h  The following excerpt from the rt_intern_hash function is an example of code that practices a method that includes the step of accessing a linked list of records having same hash address:      rthp = &amp;rt_hash_table[hash].chain;      spin_lock_bh(&amp;rt_hash_table[hash].lock);     while ((rth = *rthp) != NULL) {  **** </pre>

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		<pre data-bbox="856 310 1251 451"> chain_length++;  rthp = &amp;rth-&gt;u.rt_next; } </pre> <p data-bbox="758 492 1457 521">Source: Linux kernel source code file /net/ipv4/route.c</p> <p data-bbox="758 565 1896 849">In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
(b)	identifying at least some of the automatically expired ones of the records,	<p data-bbox="758 898 1896 1141">When Google uses (or induces or contributes to others' use of) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google practices (or induces or contributes to others' practice of) a method that includes the step of identifying at least some of the automatically expired ones of the records. Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 is especially adapted to identify at least some of the automatically expired ones of the records.</p> <p data-bbox="758 1190 1896 1287">Specifically, code contained within or accessed by the function <code>rt_intern_hash</code> in module <code>/net/ipv4/route.c</code> practices a method that includes the step of identifying at least some of the automatically expired ones of the records.</p> <p data-bbox="758 1336 1896 1399">The following excerpt from the <code>rt_intern_hash</code> function is an example of code that practices a method of identifying at least some of the automatically expired ones of the</p>

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		<p>records:</p> <pre data-bbox="945 373 1470 698"> if (!atomic_read(&amp;rth-&gt;u.dst.__refcnt)) {     u32 score = rt_score(rth);      if (score &lt;= min_score) {         cand = rth;         candp = rthp;         min_score = score;     } } </pre> <p>Source: Linux kernel source code file /net/ipv4/route.c</p> <p>In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>
(c)	removing at least some of the automatically expired records from the linked list when the linked list is accessed, and	When Google uses (or induces or contributes to others' use of) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google practices (or induces or contributes to others' practice of) a method that includes the step of removing at least some of the automatically expired records from the linked list when the linked list is accessed. Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 is especially adapted to remove at least some of the automatically expired records from the linked list when the linked list is accessed.

	<b>Claim Language</b>	<b>Accused Instrumentalities: Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11</b>
		<p>Specifically, code contained within and/or called by the function <code>rt_intern_hash</code> in module <code>/net/ipv4/route.c</code> practices a method that includes the step of removing at least some of the automatically expired records from the linked list when the linked list is accessed.</p> <p>The following excerpt from the <code>rt_intern_hash</code> function is an example of code which practices a method of removing at least some of the automatically expired records from the linked list when the linked list is accessed:</p> <pre> if (cand) {     /* ip_rt_gc_elasticity used to be average length of chain     * length, when exceeded gc becomes really aggressive.     *     * The second limit is less certain. At the moment it allows     * only 2 entries per bucket. We will see.     */     if (chain_length &gt; ip_rt_gc_elasticity) {         *candp = cand-&gt;u.rt_next;         rt_free(cand);     } } </pre> <p>Source: Linux kernel source code file <code>/net/ipv4/route.c</code></p> <p>In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned</p>

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		features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.
(d)	inserting, retrieving or deleting one of the records from the system following the step of removing.	<p>When Google uses (or induces or contributes to others' use of) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google practices (or induces or contributes to others' practice of) a method that includes the step of inserting, retrieving or deleting one of the records from the system following the step of removing. Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 is especially adapted to insert, retrieve or delete one of the records from the system following the step of removing.</p> <p>Specifically, code contained within the function <code>rt_intern_hash</code> in module <code>/net/ipv4/route.c</code> is used to practice a method that includes the step of inserting one of the records from the system following the step of removing.</p> <p>The following excerpt from the <code>rt_intern_hash</code> function is an example code which practices a method that includes the step of inserting one of the records from the system following the step of removing:</p> <pre> rt-&gt;u.rt_next = rt_hash_table[hash].chain;  ****  rt_hash_table[hash].chain = rt; </pre> <p>Source: Linux kernel source code file <code>/net/ipv4/route.c</code></p> <p>In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because</p>



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		any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.
8.	The method according to claim 7 further including the step of dynamically determining maximum number of expired ones of the records to remove when the linked list is accessed.	<p>When Google uses (or induces or contributes to others' use of) computer equipment configured with or utilizing software based on Linux kernel version 2.6.11, Google practices (or induces or contributes to others' practice of) a method that includes the step of dynamically determining maximum number of expired ones of the records to remove when the linked list is accessed. Computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 is especially adapted to dynamically determine maximum number of expired ones of the records to remove when the linked list is accessed.</p> <p>Specifically, code contained within function <code>rt_intern_hash</code>, in module <code>/net/ipv4/route.c</code>, dynamically executes based upon comparison with variable <code>ip_rt_gc_elasticity</code>. In this way, computer equipment configured with or utilizing software based on Linux kernel version 2.6.11 practices a method that includes the step of dynamically determining maximum number of expired ones of the records to remove when the linked list is accessed.</p> <p>The following excerpt from the <code>rt_intern_hash</code> function is an example of code that practices a method that includes the step of dynamically determining maximum number of expired ones of the records to remove when the linked list is accessed:</p> <pre> if (cand) {     /* ip_rt_gc_elasticity used to be average length of chain     * length, when exceeded gc becomes really aggressive.     * </pre>

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		<pre data-bbox="945 308 1701 592"> * The second limit is less certain. At the moment it allows * only 2 entries per bucket. We will see. */ if (chain_length &gt; ip_rt_gc_elasticity) {     *candp = cand-&gt;u.rt_next;     rt_free(cand); } } </pre> <p data-bbox="756 641 1459 673">Source: Linux kernel source code file /net/ipv4/route.c</p> <p data-bbox="756 706 1900 998">In the event this limitation is construed so as to be not literally present in the Accused Instrumentalities, Bedrock would alternatively contend that the Accused Instrumentalities meet the recited limitation under the doctrine of equivalents, because any purported differences between this limitation and the aforementioned features of the Accused Instrumentalities would be insubstantial. For example, the aforementioned features of the Accused Instrumentalities would perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the recited limitation.</p>