cdnlink_router

Design Description

Erwin

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Publication date 22-Mar-2015 19:43:17

For Internal Distribution Only

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Version: 1.1602

Last modified: Sun Mar 22 19:41:24 2015

Checksum: 3566851379 3530341621 1624935617 1616742390

Chapter 2. Root System

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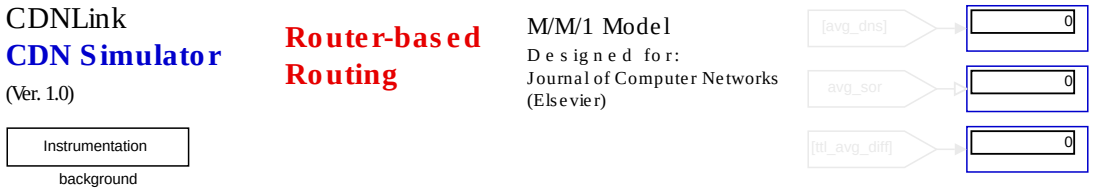
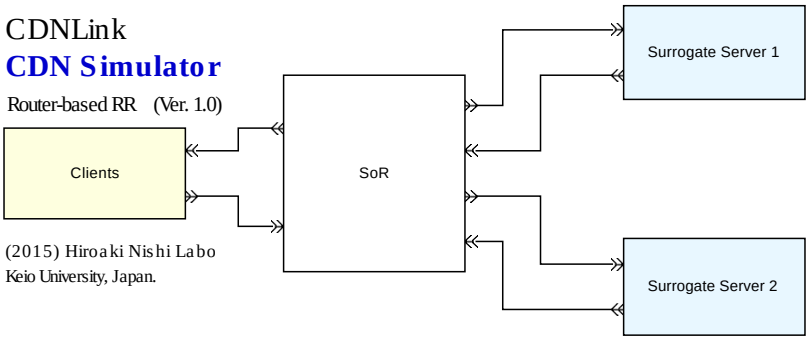
Figure 2.1. cdnlink_router





2.1. Blocks

2.1.1. Parameters

2.1.1.1. "AvgDelay SQ11" (Display)

Table 2.1. "AvgDelay SQ11" Parameters

Parameter	Value
Format	short
Decimation	1
Floating display	off

2.1.1.2. "AvgDelay SQ12" (Display)

Table 2.2. "AvgDelay SQ12" Parameters

Parameter	Value
Format	short
Decimation	1
Floating display	off

2.1.1.3. "AvgDelay SQ13" (Display)

Table 2.3. "AvgDelay SQ13" Parameters

Parameter	Value
Format	short
Decimation	1
Floating display	off

2.1.1.4. "From10" (From)

Table 2.4. "From10" Parameters

Parameter	Value
Goto tag	avg_dns
Icon display	Tag

2.1.1.5. "From11" (From)

Table 2.5. "From11" Parameters

Parameter	Value
Goto tag	avg_sor
Icon display	Tag

2.1.1.6. "From12" (From)

Table 2.6. "From12" Parameters

Parameter	Value
Goto tag	ttl_avg_diff

Parameter	Value
Icon display	Tag and signal name

2.1.2. Block Execution Order

1. Uniform Random Number [29] (UniformRandomNumber)
2. Rate Factor [29] (Constant)
3. Slider Gain (Gain)
4. Uniform Random Number [32] (UniformRandomNumber)
5. Rate Factor [32] (Constant)
6. Slider Gain (Gain)
7. Uniform Random Number [23] (UniformRandomNumber)
8. Rate Factor [34] (Constant)
9. Slider Gain (Gain)
10. Uniform Random Number [20] (UniformRandomNumber)
11. Uniform Random Number [17] (UniformRandomNumber)
12. Uniform Random Number [14] (UniformRandomNumber)
13. Uniform Random Number [11] (UniformRandomNumber)
14. Uniform Random Number1 [26] (UniformRandomNumber)
15. Rate Factor [25] (Constant)
16. Slider Gain (Gain)
17. SESubgraph0 (SESubgraph)
18. Read Timer [80] (ReadTimer)
19. Read Timer [91] (ReadTimer)
20. Read Timer [101] (ReadTimer)
21. Read Timer [110] (ReadTimer)
22. Read Timer [120] (ReadTimer)
23. Number of client [34] (Constant)
24. *Average DNS-based*
25. AvgDelay SQ11 [2] (Display)
26. AvgDelay SQ12 [2] (Display)
27. AvgDelay SQ13 [3] (Display)
28. Path Combiner [39] (PathCombiner)
29. client_attr [38] (OutputSwitch)
30. Packet Generator [79] (TimeBasedEntityGenerator)
31. Display1 [74] (Display)
32. Atp0ce8ece7_d772_476f_9cd1_74735e23819c1 [10] (TimedToEventSignal)
33. Atp0ce8ece7_d772_476f_9cd1_74735e23819c2 [10] (TimedToEventSignal)
34. *MATLAB Function*
35. AvgDelay SQ1 [10] (Display)
36. Delay Client-Router [73] (NServer)
37. Entity Sink [75] (EntitySink)
38. Display [74] (Display)
39. Display2 [74] (Display)
40. FIFO Queue4 [75] (FIFOQueue)
41. Get Attribute [75] (GetAttribute)
42. *MATLAB Function*
43. Output Switch [79] (OutputSwitch)
44. Path Combiner2 [80] (PathCombiner)
45. Server 0 [81] (SingleServer)
46. Server2 [82] (SingleServer)

47. Set Attribute6 [83] (SetAttribute)
48. Start Timer [83] (StartTimer)
49. From Router 1 [75] (PMIOPort)
50. To Router 1 [83] (PMIOPort)
51. Atp0ce8ece7_d772_476f_9cd1_74735e23819c1 [13] (TimedToEventSignal)
52. Atp0ce8ece7_d772_476f_9cd1_74735e23819c2 [13] (TimedToEventSignal)
53. *MATLAB Function*
54. AvgDelay SQ1 [13] (Display)
55. Packet Generator [89] (TimeBasedEntityGenerator)
56. Delay Client-Router [84] (NServer)
57. Entity Sink [85] (EntitySink)
58. FIFO Queue4 [85] (FIFOQueue)
59. Get Attribute [86] (GetAttribute)
60. *MATLAB Function*
61. Output Switch [89] (OutputSwitch)
62. Path Combiner2 [90] (PathCombiner)
63. Server 0 [91] (SingleServer)
64. Server2 [92] (SingleServer)
65. Set Attribute6 [93] (SetAttribute)
66. Start Timer [93] (StartTimer)
67. From Router 1 [86] (PMIOPort)
68. To Router 1 [93] (PMIOPort)
69. Atp0ce8ece7_d772_476f_9cd1_74735e23819c1 [16] (TimedToEventSignal)
70. Atp0ce8ece7_d772_476f_9cd1_74735e23819c2 [16] (TimedToEventSignal)
71. *MATLAB Function*
72. AvgDelay SQ1 [16] (Display)
73. Packet Generator [99] (TimeBasedEntityGenerator)
74. Delay Client-Router [94] (NServer)
75. Entity Sink [95] (EntitySink)
76. FIFO Queue4 [95] (FIFOQueue)
77. Get Attribute [96] (GetAttribute)
78. *MATLAB Function*
79. Output Switch [99] (OutputSwitch)
80. Path Combiner2 [100] (PathCombiner)
81. Server 0 [101] (SingleServer)
82. Server2 [102] (SingleServer)
83. Set Attribute6 [103] (SetAttribute)
84. Start Timer [103] (StartTimer)
85. From Router 1 [96] (PMIOPort)
86. To Router 1 [103] (PMIOPort)
87. Atp0ce8ece7_d772_476f_9cd1_74735e23819c1 [19] (TimedToEventSignal)
88. Atp0ce8ece7_d772_476f_9cd1_74735e23819c2 [19] (TimedToEventSignal)
89. *MATLAB Function*
90. AvgDelay SQ1 [19] (Display)
91. Packet Generator [109] (TimeBasedEntityGenerator)
92. Delay Client-Router [104] (NServer)
93. Entity Sink [105] (EntitySink)
94. FIFO Queue4 [105] (FIFOQueue)
95. Get Attribute [106] (GetAttribute)
96. *MATLAB Function*
97. Output Switch [109] (OutputSwitch)
98. Path Combiner2 [110] (PathCombiner)
99. Server 0 [111] (SingleServer)
100. Server2 [111] (SingleServer)

101. Set Attribute6 [112] (SetAttribute)
102. Start Timer [113] (StartTimer)
103. From Router 1 [105] (PMIOPort)
104. To Router 1 [113] (PMIOPort)
105. Atp0ce8ece7_d772_476f_9cd1_74735e23819c1 [22] (TimedToEventSignal)
106. Atp0ce8ece7_d772_476f_9cd1_74735e23819c2 [22] (TimedToEventSignal)
107. *MATLAB Function*
108. AvgDelay SQ1 [22] (Display)
109. Packet Generator [119] (TimeBasedEntityGenerator)
110. Delay Client-Router [114] (NServer)
111. Entity Sink [114] (EntitySink)
112. FIFO Queue4 [115] (FIFOQueue)
113. Get Attribute [115] (GetAttribute)
114. *MATLAB Function*
115. Output Switch [118] (OutputSwitch)
116. Path Combiner2 [120] (PathCombiner)
117. Server 0 [120] (SingleServer)
118. Server2 [121] (SingleServer)
119. Set Attribute6 [122] (SetAttribute)
120. Start Timer [122] (StartTimer)
121. From Router 1 [115] (PMIOPort)
122. To Router 1 [123] (PMIOPort)
123. From Router 1 [39] (PMIOPort)
124. To Router 1 [40] (PMIOPort)
125. Atp0ce8ece7_d772_476f_9cd1_74735e23819c1 [24] (TimedToEventSignal)
126. Atp0ce8ece7_d772_476f_9cd1_74735e23819c2 [24] (TimedToEventSignal)
127. *MATLAB Function*
128. AvgDelay SQ1 [24] (Display)
129. Server [63] (SingleServer)
130. Delay Router-Client [56] (NServer)
131. Delay Router-S1 [56] (NServer)
132. Delay Router-S2 [57] (NServer)
133. Path Combiner [62] (PathCombiner)
134. Entity Departed3 [58] (Display)
135. Entity Sink [58] (EntitySink)
136. FIFO Queue [59] (FIFOQueue)
137. Get Attribute [60] (GetAttribute)
138. *MATLAB Function*
139. Output Switch [62] (OutputSwitch)
140. Server 0 [63] (SingleServer)
141. Path Combiner9 [126] (PathCombiner)
142. AvgDelay SQ3 [55] (Display)
143. Destination dns1 (Random) [123] (OutputSwitch)
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145. Event-Based Random Number1 [124] (EventBasedRandomNumber)
146. Set Attribute11 [126] (SetAttribute)
147. Set Attribute15 [127] (SetAttribute)
148. Fr S2 [125] (PMIOPort)
149. To S1 [127] (PMIOPort)
150. To S1 [64] (PMIOPort)
151. Fr S1 [59] (PMIOPort)
152. To C1 [64] (PMIOPort)
153. To S2 [65] (PMIOPort)
154. Fr S2 [59] (PMIOPort)

155. From Client [59] (PMIOPort)
156. Atp0ce8ece7_d772_476f_9cd1_74735e23819c1 [28] (TimedToEventSignal)
157. Atp0ce8ece7_d772_476f_9cd1_74735e23819c2 [28] (TimedToEventSignal)
158. *MATLAB Function*
159. Server1 [67] (SingleServer)
160. Delay S1-Router [65] (NServer)
161. Display1 [66] (Display)
162. FIFO Queue1 [66] (FIFOQueue)
163. Set Attribute: reply [68] (SetAttribute)
164. From R1 [67] (PMIOPort)
165. To R1 [69] (PMIOPort)
166. Atp0ce8ece7_d772_476f_9cd1_74735e23819c1 [31] (TimedToEventSignal)
167. Atp0ce8ece7_d772_476f_9cd1_74735e23819c2 [31] (TimedToEventSignal)
168. *MATLAB Function*
169. Server1 [71] (SingleServer)
170. Delay S2-Router [69] (NServer)
171. FIFO Queue1 [70] (FIFOQueue)
172. Set Attribute: reply [72] (SetAttribute)
173. From R3 [71] (PMIOPort)
174. To R3 [72] (PMIOPort)
175. QL Surrogate with DNS [34] (Scope)
176. TmpSignal ConversionAtEvent to Timed SignalInport1 (SignalConversion)
177. Event to Timed Signal [33] (EventToTimedSignal)
178. Rate Factor1 [35] (Constant)
179. Slider Gain (Gain)
180. Rate Factor2 [35] (Constant)
181. Slider Gain (Gain)
182. Rate Factor3 [35] (Constant)
183. Slider Gain (Gain)
184. Rate Factor4 [36] (Constant)
185. Slider Gain (Gain)
186. To File [37] (ToFile)
187. DNS_Av_Rtt [43] (Scope)
188. DNS_Total_Av_Rtt [43] (Scope)
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190. Scope1 [54] (Scope)
191. Scope2 [54] (Scope)
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193. Event to Timed Signal [43] (EventToTimedSignal)
194. Subtract [54] (Sum)
195. RTT1 [54] (Scope)
196. RTT2 [54] (Scope)
197. To File [55] (ToFile)
198. DNS-based Server with 75% Utility [128] (Scope)
199. SESubgraph1 (SESubgraph)

Chapter 3. Subsystems

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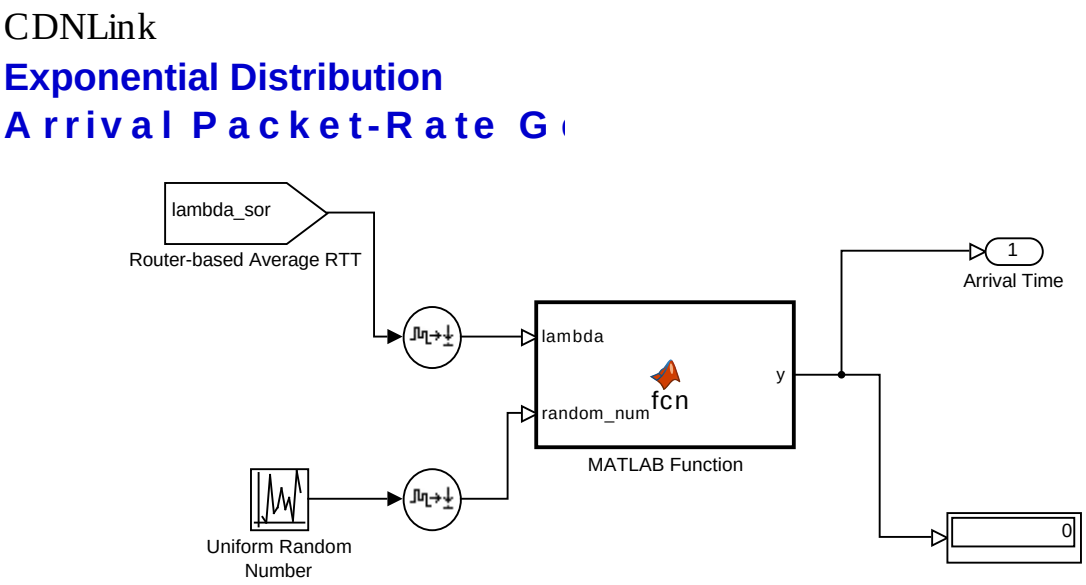


3.1.1. Blocks

3.1.1.1. Parameters

3.1.1.1.1. "Arrival Time" (Outport)

Table 3.1. "Arrival Time" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit

Parameter	Value
Sample time (-1 for inherited)	-1
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]

3.1.1.1.2. "AvgDelay SQ1" (Display)

Table 3.2. "AvgDelay SQ1" Parameters

Parameter	Value
Format	long
Decimation	1
Floating display	off

3.1.1.1.3. "MATLAB Function" (MATLAB Function)

Table 3.3. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.4. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
lambda	Input	1	double	1
y	Output	1	double	1
random_num	Input	2	double	1

MATLAB Function Function Script

```
function y = fcn(lambda,random_num)
%#codegen

y = (-1/lambda)*log(random_num);
```

Table 3.5. MATLAB Function Supporting Functions

Function	Defined By	Path
coder.internal.assert	MATLAB	
coder.internal.div	MATLAB	
coder.internal.isBuiltInNumeric	MATLAB	
log	MATLAB	
mrdivide	MATLAB	
rdivide	MATLAB	
realmax	MATLAB	

3.1.1.1.4. "Router-based Average RTT" (From)

Table 3.6. "Router-based Average RTT" Parameters

Parameter	Value
Goto tag	lambda_sor
Icon display	Tag

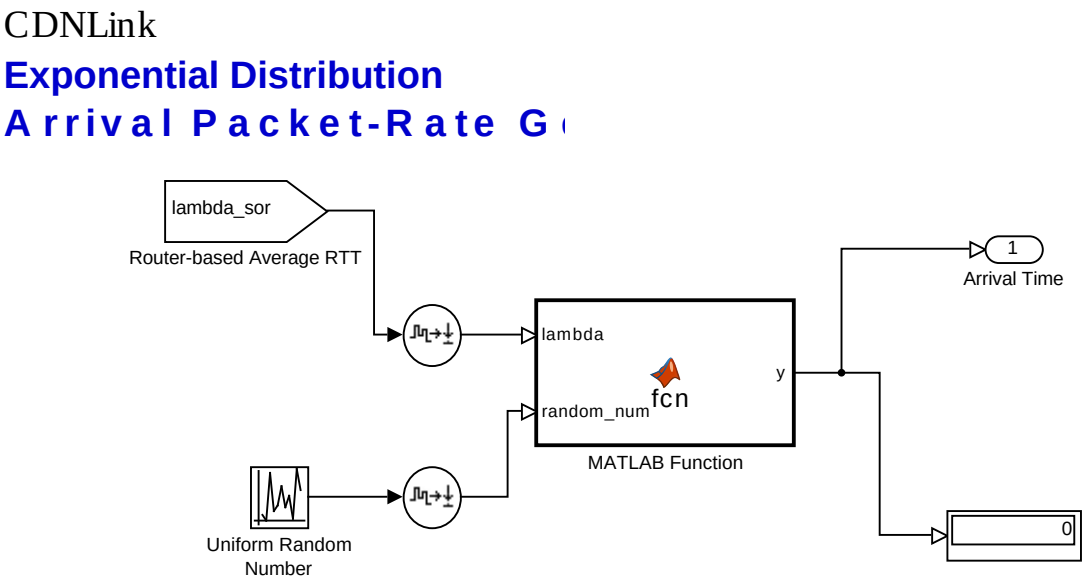
3.1.1.1.5. "Uniform Random Number" (UniformRandomNumber)

Table 3.7. "Uniform Random Number" Parameters

Parameter	Value
Minimum	0
Maximum	1
Seed	21362
Sample time	0
Interpret vector parameters as 1-D	on

3.2. 1

Figure 3.2. cdnlink_router/Client 1/SoR Client 2/ 1



3.2.1. Blocks

3.2.1.1. Parameters

3.2.1.1.1. "Arrival Time" (Outport)

Table 3.8. "Arrival Time" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit

Parameter	Value
Sample time (-1 for inherited)	-1
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]

3.2.1.1.2. "AvgDelay SQ1" (Display)

Table 3.9. "AvgDelay SQ1" Parameters

Parameter	Value
Format	long
Decimation	1
Floating display	off

3.2.1.1.3. "MATLAB Function" (MATLAB Function)

Table 3.10. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.11. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
lambda	Input	1	double	1
y	Output	1	double	1
random_num	Input	2	double	1

MATLAB Function Function Script

```
function y = fcn(lambda,random_num)
%#codegen

y = (-1/lambda)*log(random_num);
```

Table 3.12. MATLAB Function Supporting Functions

Function	Defined By	Path
coder.internal.assert	MATLAB	
coder.internal.div	MATLAB	
coder.internal.isBuiltInNumeric	MATLAB	
log	MATLAB	
mrdivide	MATLAB	
rdivide	MATLAB	
realmax	MATLAB	

3.2.1.1.4. "Router-based Average RTT" (From)

Table 3.13. "Router-based Average RTT" Parameters

Parameter	Value
Goto tag	lambda_sor
Icon display	Tag

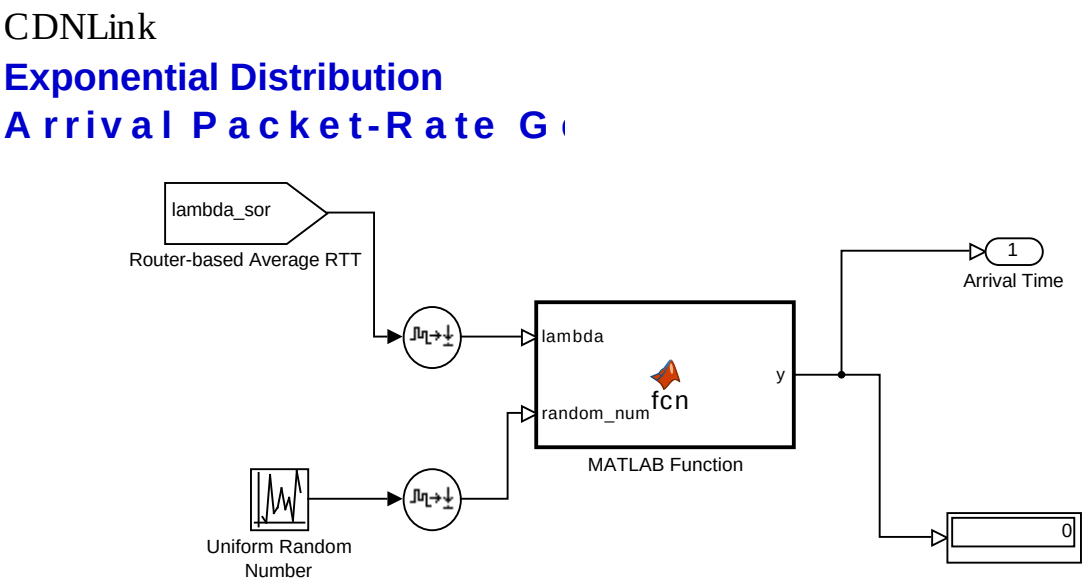
3.2.1.1.5. "Uniform Random Number" (UniformRandomNumber)

Table 3.14. "Uniform Random Number" Parameters

Parameter	Value
Minimum	0
Maximum	1
Seed	53704
Sample time	0
Interpret vector parameters as 1-D	on

3.3. 1

Figure 3.3. cdnlink_router/Client 1/SoR Client 3/ 1



3.3.1. Blocks

3.3.1.1. Parameters

3.3.1.1.1. "Arrival Time" (Outport)

Table 3.15. "Arrival Time" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit

Parameter	Value
Sample time (-1 for inherited)	-1
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]

3.3.1.1.2. "AvgDelay SQ1" (Display)

Table 3.16. "AvgDelay SQ1" Parameters

Parameter	Value
Format	long
Decimation	1
Floating display	off

3.3.1.1.3. "MATLAB Function" (MATLAB Function)

Table 3.17. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.18. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
lambda	Input	1	double	1
y	Output	1	double	1
random_num	Input	2	double	1

MATLAB Function Function Script

```
function y = fcn(lambda,random_num)
%#codegen

y = (-1/lambda)*log(random_num);
```

Table 3.19. MATLAB Function Supporting Functions

Function	Defined By	Path
coder.internal.assert	MATLAB	
coder.internal.div	MATLAB	
coder.internal.isBuiltInNumeric	MATLAB	
log	MATLAB	
mrdivide	MATLAB	
rdivide	MATLAB	
realmax	MATLAB	

3.3.1.1.4. "Router-based Average RTT" (From)

Table 3.20. "Router-based Average RTT" Parameters

Parameter	Value
Goto tag	lambda_sor
Icon display	Tag

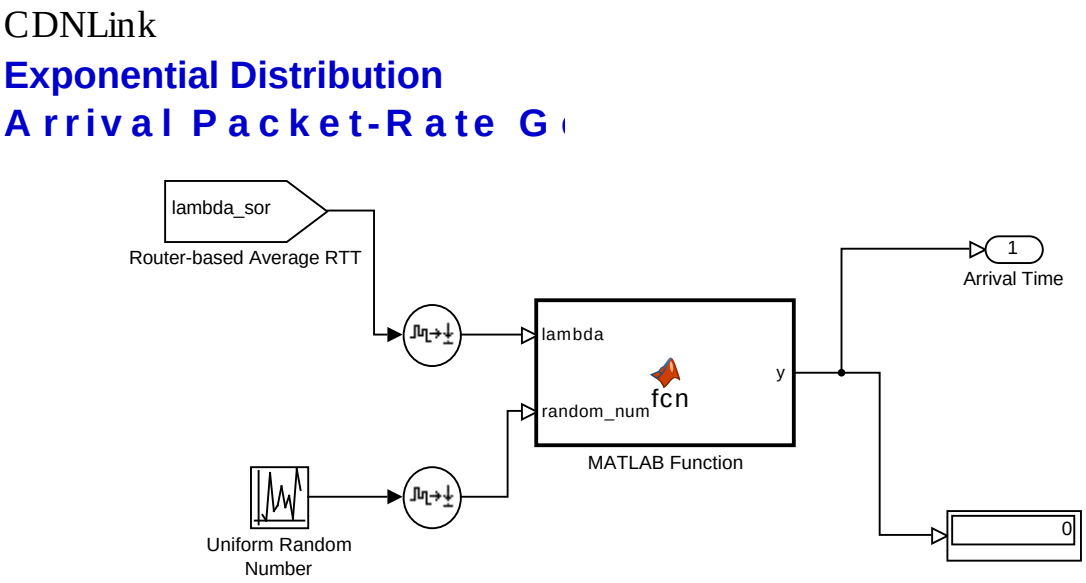
3.3.1.1.5. "Uniform Random Number" (UniformRandomNumber)

Table 3.21. "Uniform Random Number" Parameters

Parameter	Value
Minimum	0
Maximum	1
Seed	28165
Sample time	0
Interpret vector parameters as 1-D	on

3.4. 1

Figure 3.4. cdnlink_router/Client 1/SoR Client 4/ 1



3.4.1. Blocks

3.4.1.1. Parameters

3.4.1.1.1. "Arrival Time" (Outport)

Table 3.22. "Arrival Time" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit

Parameter	Value
Sample time (-1 for inherited)	-1
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]

3.4.1.1.2. "AvgDelay SQ1" (Display)

Table 3.23. "AvgDelay SQ1" Parameters

Parameter	Value
Format	long
Decimation	1
Floating display	off

3.4.1.1.3. "MATLAB Function" (MATLAB Function)

Table 3.24. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.25. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
lambda	Input	1	double	1
y	Output	1	double	1
random_num	Input	2	double	1

MATLAB Function Function Script

```
function y = fcn(lambda,random_num)
%#codegen

y = (-1/lambda)*log(random_num);
```

Table 3.26. MATLAB Function Supporting Functions

Function	Defined By	Path
coder.internal.assert	MATLAB	
coder.internal.div	MATLAB	
coder.internal.isBuiltInNumeric	MATLAB	
log	MATLAB	
mrdivide	MATLAB	
rdivide	MATLAB	
realmax	MATLAB	

3.4.1.1.4. "Router-based Average RTT" (From)

Table 3.27. "Router-based Average RTT" Parameters

Parameter	Value
Goto tag	lambda_sor
Icon display	Tag

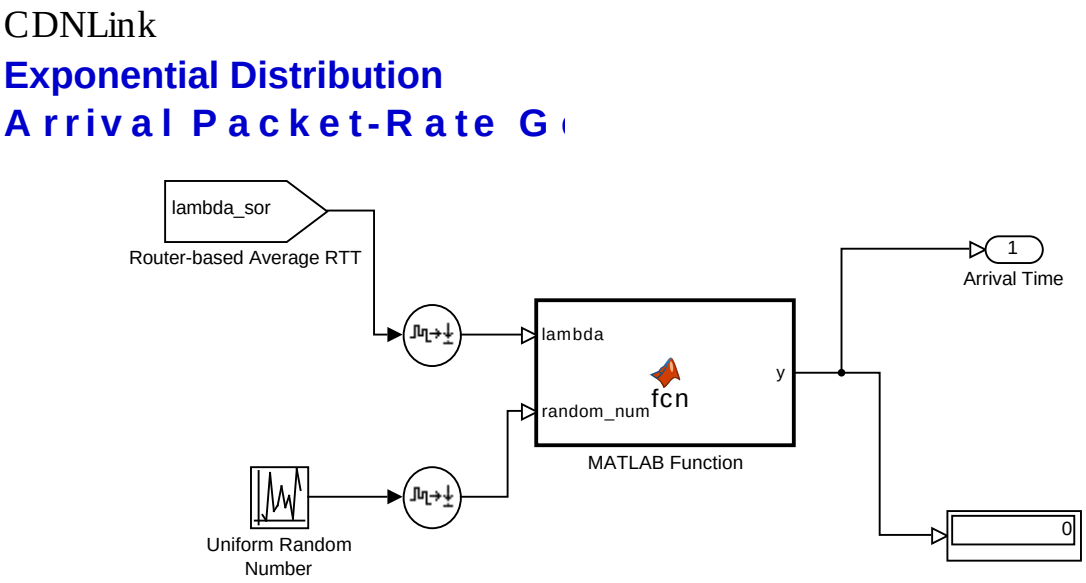
3.4.1.1.5. "Uniform Random Number" (UniformRandomNumber)

Table 3.28. "Uniform Random Number" Parameters

Parameter	Value
Minimum	0
Maximum	1
Seed	21109
Sample time	0
Interpret vector parameters as 1-D	on

3.5. 1

Figure 3.5. cdnlink_router/Client 1/SoR Client 5/ 1



3.5.1. Blocks

3.5.1.1. Parameters

3.5.1.1.1. "Arrival Time" (Outport)

Table 3.29. "Arrival Time" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit

Parameter	Value
Sample time (-1 for inherited)	-1
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]

3.5.1.1.2. "AvgDelay SQ1" (Display)

Table 3.30. "AvgDelay SQ1" Parameters

Parameter	Value
Format	long
Decimation	1
Floating display	off

3.5.1.1.3. "MATLAB Function" (MATLAB Function)

Table 3.31. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.32. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
lambda	Input	1	double	1
y	Output	1	double	1
random_num	Input	2	double	1

MATLAB Function Function Script

```
function y = fcn(lambda,random_num)
%#codegen

y = (-1/lambda)*log(random_num);
```

Table 3.33. MATLAB Function Supporting Functions

Function	Defined By	Path
coder.internal.assert	MATLAB	
coder.internal.div	MATLAB	
coder.internal.isBuiltInNumeric	MATLAB	
log	MATLAB	
mrdivide	MATLAB	
rdivide	MATLAB	
realmax	MATLAB	

3.5.1.1.4. "Router-based Average RTT" (From)

Table 3.34. "Router-based Average RTT" Parameters

Parameter	Value
Goto tag	lambda_sor
Icon display	Tag

3.5.1.1.5. "Uniform Random Number" (UniformRandomNumber)

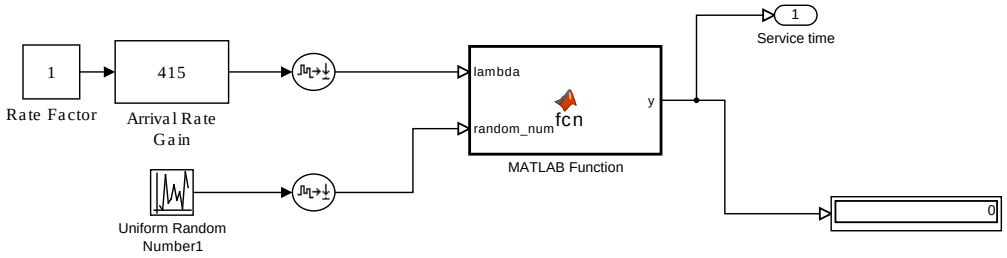
Table 3.35. "Uniform Random Number" Parameters

Parameter	Value
Minimum	0
Maximum	1
Seed	16144
Sample time	0
Interpret vector parameters as 1-D	on

3.6. 1

Figure 3.6. cdnlink_router/Router 1/ 1

QueLink-NS
Exponential Distribution
S e r v i c e R a t e G e



3.6.1. Blocks

3.6.1.1. Parameters

3.6.1.1.1. "AvgDelay SQ1" (Display)

Table 3.36. "AvgDelay SQ1" Parameters

Parameter	Value
Format	long
Decimation	1
Floating display	off

3.6.1.1.2. "MATLAB Function" (MATLAB Function)

Table 3.37. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point

Property	Value
Input fi math	fimath(...)
Description	

Table 3.38. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
lambda	Input	1	double	1
y	Output	1	double	1
random_num	Input	2	double	1

MATLAB Function Function Script

```
function y = fcn(lambda,random_num)
%#codegen

y = (-1/lambda)*log(random_num);
```

Table 3.39. MATLAB Function Supporting Functions

Function	Defined By	Path
coder.internal.assert	MATLAB	
coder.internal.div	MATLAB	
coder.internal.isBuiltInNumeric	MATLAB	
log	MATLAB	
mrdivide	MATLAB	
rdivide	MATLAB	
realmax	MATLAB	

3.6.1.1.3. "Rate Factor" (Constant)

Table 3.40. "Rate Factor" Parameters

Parameter	Value
Constant value	1
Interpret vector parameters as 1-D	on
Sampling mode	Sample based
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off

Parameter	Value
Sample time	inf
Frame period	inf

3.6.1.1.4. "Service time" (Outport)

Table 3.41. "Service time" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]

3.6.1.1.5. "Uniform Random Number1" (UniformRandomNumber)

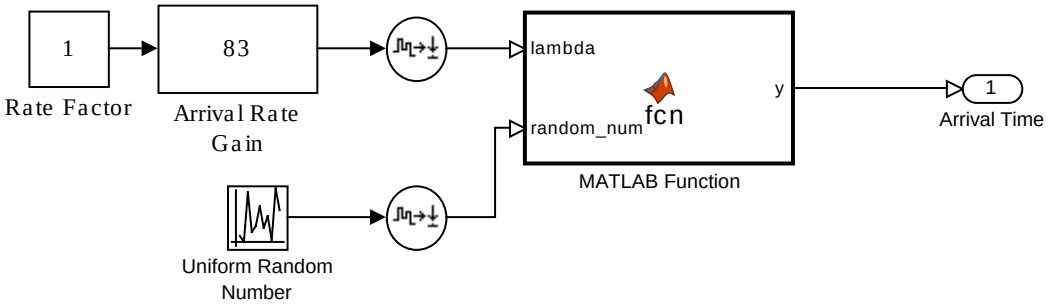
Table 3.42. "Uniform Random Number1" Parameters

Parameter	Value
Minimum	0
Maximum	1
Seed	96286
Sample time	0
Interpret vector parameters as 1-D	on

3.7. 2

Figure 3.7. cdnlink_router/Server 1/ 2

CDNLink
Exponential Distribution
A r r i v a l P a c k e t-R a t e G



3.7.1. Blocks

3.7.1.1. Parameters

3.7.1.1.1. "Arrival Time" (Outport)

Table 3.43. "Arrival Time" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit

Parameter	Value
Sample time (-1 for inherited)	-1
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]

3.7.1.1.2. "MATLAB Function" (MATLAB Function)

Table 3.44. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.45. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
lambda	Input	1	double	1
y	Output	1	double	1
random_num	Input	2	double	1

MATLAB Function Function Script

```
function y = fcn(lambda,random_num)
%#codegen

y = (-1/lambda)*log(random_num);
```

Table 3.46. MATLAB Function Supporting Functions

Function	Defined By	Path
coder.internal.assert	MATLAB	

Function	Defined By	Path
coder.internal.div	MATLAB	
coder.internal.isBuiltInNumeric	MATLAB	
log	MATLAB	
mrdivide	MATLAB	
rdivide	MATLAB	
realmax	MATLAB	

3.7.1.1.3. "Rate Factor" (Constant)

Table 3.47. "Rate Factor" Parameters

Parameter	Value
Constant value	1
Interpret vector parameters as 1-D	on
Sampling mode	Sample based
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.7.1.1.4. "Uniform Random Number" (UniformRandomNumber)

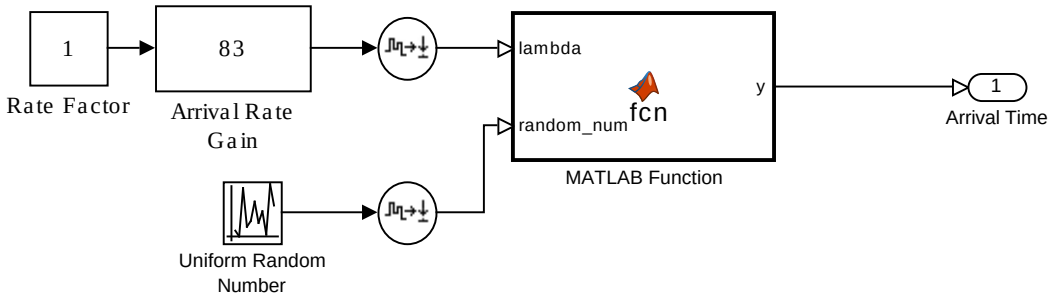
Table 3.48. "Uniform Random Number" Parameters

Parameter	Value
Minimum	0
Maximum	1
Seed	96286
Sample time	0
Interpret vector parameters as 1-D	on

3.8. 2

Figure 3.8. cdnlink_router/Server 2/ 2

CDNLink
Exponential Distribution
A r r i v a l P a c k e t-R a t e G



3.8.1. Blocks

3.8.1.1. Parameters

3.8.1.1.1. "Arrival Time" (Outport)

Table 3.49. "Arrival Time" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit

Parameter	Value
Sample time (-1 for inherited)	-1
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]

3.8.1.1.2. "MATLAB Function" (MATLAB Function)

Table 3.50. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.51. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
lambda	Input	1	double	1
y	Output	1	double	1
random_num	Input	2	double	1

MATLAB Function Function Script

```
function y = fcn(lambda,random_num)
%#codegen

y = (-1/lambda)*log(random_num);
```

Table 3.52. MATLAB Function Supporting Functions

Function	Defined By	Path
coder.internal.assert	MATLAB	

Function	Defined By	Path
coder.internal.div	MATLAB	
coder.internal.isBuiltInNumeric	MATLAB	
log	MATLAB	
mrdivide	MATLAB	
rdivide	MATLAB	
realmax	MATLAB	

3.8.1.1.3. "Rate Factor" (Constant)

Table 3.53. "Rate Factor" Parameters

Parameter	Value
Constant value	1
Interpret vector parameters as 1-D	on
Sampling mode	Sample based
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

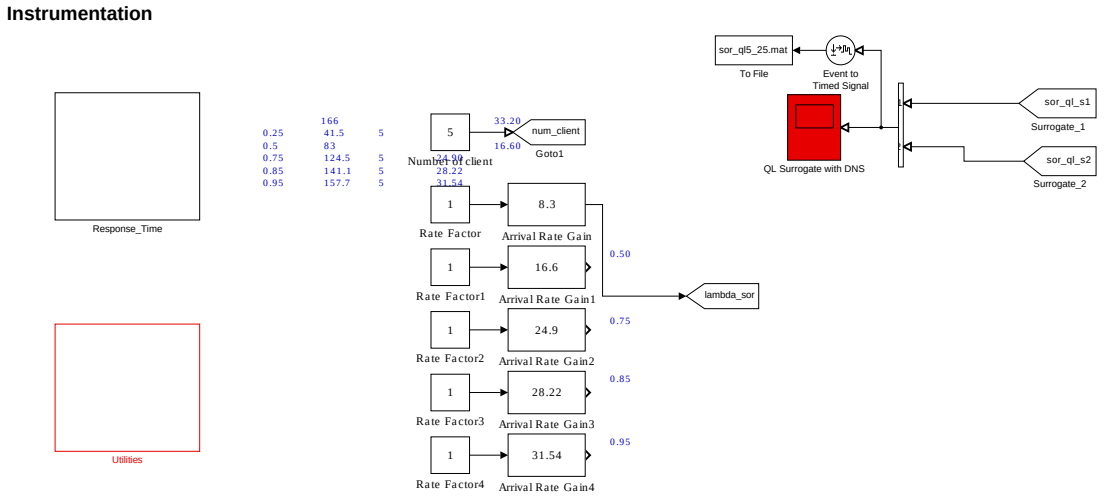
3.8.1.1.4. "Uniform Random Number" (UniformRandomNumber)

Table 3.54. "Uniform Random Number" Parameters

Parameter	Value
Minimum	0
Maximum	1
Seed	96286
Sample time	0
Interpret vector parameters as 1-D	on

3.9. background

Figure 3.9. cdnlink_router/background



3.9.1. Blocks

3.9.1.1. Parameters

3.9.1.1.1. "Goto1" (Goto)

Table 3.55. "Goto1" Parameters

Parameter	Value
Tag	num_client
Icon display	Tag
Tag visibility	global

3.9.1.1.2. "Goto4" (Goto)

Table 3.56. "Goto4" Parameters

Parameter	Value
Tag	lambda_sor
Icon display	Tag
Tag visibility	global

3.9.1.1.3. "Mux4" (Mux)

Table 3.57. "Mux4" Parameters

Parameter	Value
Number of inputs	2
Display option	signals

3.9.1.1.4. "Number of client" (Constant)

Table 3.58. "Number of client" Parameters

Parameter	Value
Constant value	5
Interpret vector parameters as 1-D	on
Sampling mode	Sample based
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.9.1.1.5. "Rate Factor" (Constant)

Table 3.59. "Rate Factor" Parameters

Parameter	Value
Constant value	1
Interpret vector parameters as 1-D	on
Sampling mode	Sample based
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.9.1.1.6. "Rate Factor1" (Constant)

Table 3.60. "Rate Factor1" Parameters

Parameter	Value
Constant value	1
Interpret vector parameters as 1-D	on
Sampling mode	Sample based
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.9.1.1.7. "Rate Factor2" (Constant)

Table 3.61. "Rate Factor2" Parameters

Parameter	Value
Constant value	1
Interpret vector parameters as 1-D	on
Sampling mode	Sample based
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.9.1.1.8. "Rate Factor3" (Constant)

Table 3.62. "Rate Factor3" Parameters

Parameter	Value
Constant value	1

Parameter	Value
Interpret vector parameters as 1-D	on
Sampling mode	Sample based
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.9.1.1.9. "Rate Factor4" (Constant)

Table 3.63. "Rate Factor4" Parameters

Parameter	Value
Constant value	1
Interpret vector parameters as 1-D	on
Sampling mode	Sample based
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.9.1.1.10. "Surrogate_1" (From)

Table 3.64. "Surrogate_1" Parameters

Parameter	Value
Goto tag	sor_ql_s1
Icon display	Tag

3.9.1.1.11. "Surrogate_2" (From)

Table 3.65. "Surrogate_2" Parameters

Parameter	Value
Goto tag	sor_ql_s2
Icon display	Tag

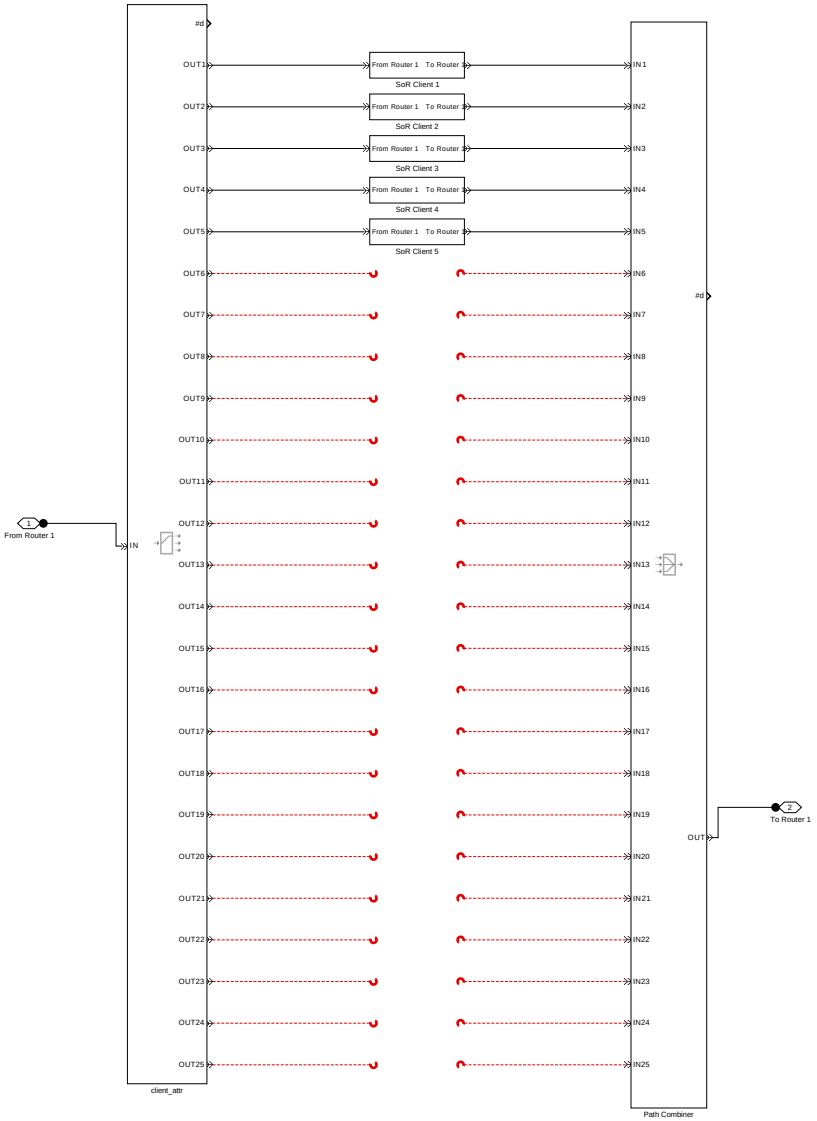
3.9.1.1.12. "To File" (ToFile)

Table 3.66. "To File" Parameters

Parameter	Value
File name	sor_ql5_25.mat
Variable name	sor_ql5_25
Save format	Array
Decimation	2
Sample time (-1 for inherited)	-1

3.10. Client 1

Figure 3.10. cdnlink_router/Client 1



3.10.1. Blocks

3.10.1.1. Parameters

3.10.1.1.1. "client_attr" (OutputSwitch)

Table 3.67. "client_attr" Parameters

Parameter	Value
Number of entity output ports	25
Switching criterion	From attribute
Initial seed	34567
Attribute name	client
Specify initial port selection	off
Initial port selection	1
Store entity before switching	off
Resolve simultaneous signal updates according to event priority	off
Event priority	4000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities timed-out, #to	off
Pending entity present in block, pe	off
Last entity departure port, last	off

3.10.1.1.2. "From Router 1" (PMIOPort)

Table 3.68. "From Router 1" Parameters

Parameter	Value
Port number	1
Port location on parent subsystem	Right

3.10.1.1.3. "Path Combiner" (PathCombiner)

Table 3.69. "Path Combiner" Parameters

Parameter	Value
Number of entity input ports	25
Input port precedence	IN1 port
Initial seed	45675
Resolve simultaneous signal updates according to event priority	off
Event priority	4100
Number of entities departed, #d	on
Last entity arrival port, last	off

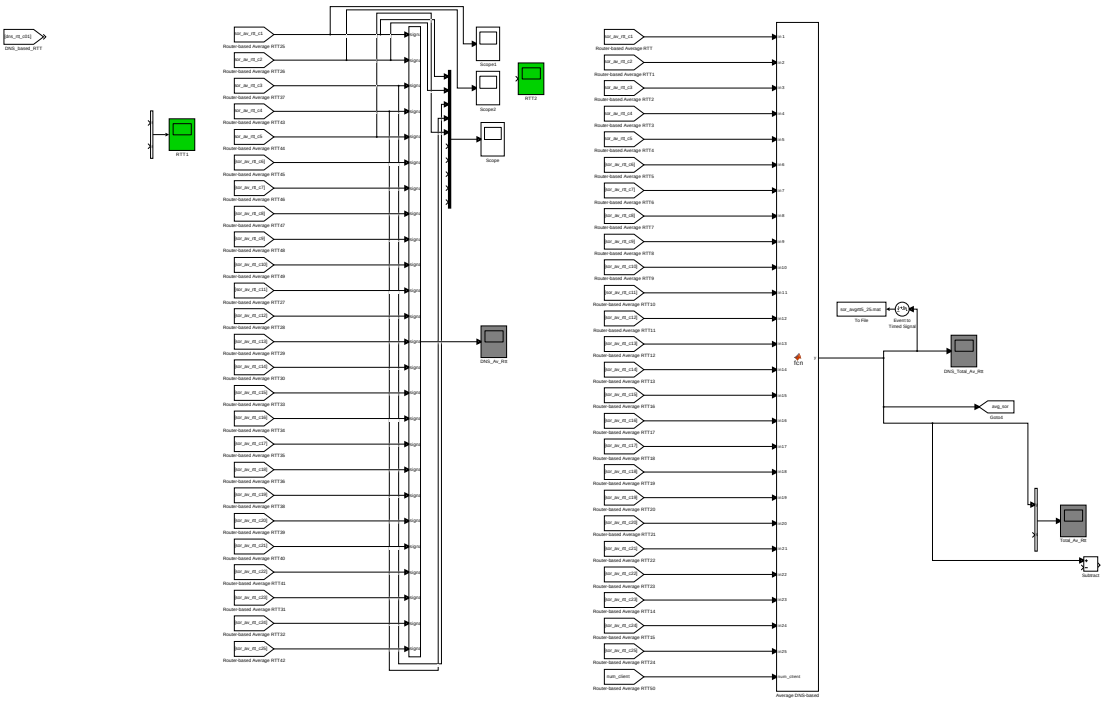
3.10.1.1.4. "To Router 1" (PMIOPort)

Table 3.70. "To Router 1" Parameters

Parameter	Value
Port number	2
Port location on parent subsystem	Right

3.11. Response_Time

Figure 3.11. cdnlink_router/background/Response_Time



3.11.1. Blocks

3.11.1.1. Parameters

3.11.1.1.1. "Average DNS-based" (MATLAB Function)

Table 3.71. Average DNS-based Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.72. Average DNS-based Argument Summary

Name	Scope	Port	Data Type	Size
in1	Input	1	double	1
y	Output	1	double	1
in2	Input	2	double	1
in3	Input	3	double	1
in4	Input	4	double	1
in5	Input	5	double	1
in6	Input	6	double	1
in7	Input	7	double	1
in8	Input	8	double	1
in9	Input	9	double	1
in10	Input	10	double	1
in11	Input	11	double	1
in12	Input	12	double	1
in13	Input	13	double	1
in14	Input	14	double	1
in15	Input	15	double	1
in16	Input	16	double	1
in17	Input	17	double	1
in18	Input	18	double	1
in19	Input	19	double	1
in20	Input	20	double	1
in21	Input	21	double	1
in22	Input	22	double	1
in23	Input	23	double	1
in24	Input	24	double	1
in25	Input	25	double	1
num_client	Input	26	double	1

Average DNS-based Function Script

```
function y = fcn(in1,in2,in3,in4,in5, ...
                 in6,in7,in8,in9,in10, ...
                 in11,in12,in13,in14,in15, ...
                 in16,in17,in18,in19,in20, ...
                 in21,in22,in23,in24,in25, ...
                 num_client)

%#codegen

y = (in1+in2+in3+in4+in5+ ...
     in6+in7+in8+in9+in10+ ...
```

```
in11+in12+in13+in14+in15+ ...
in16+in17+in18+in19+in20+ ...
in21+in22+in23+in24+in25)/num_client;
```

Table 3.73. Average DNS-based Supporting Functions

Function	Defined By	Path
coder.internal.assert	MATLAB	
coder.internal.div	MATLAB	
coder.internal.isBuiltInNumeric	MATLAB	
mrdivide	MATLAB	
rdivide	MATLAB	

3.11.1.1.2. "DNS_based_RTT" (From)

Table 3.74. "DNS_based_RTT" Parameters

Parameter	Value
Goto tag	dns_rtt_c01
Icon display	Signal name

3.11.1.1.3. "Goto4" (Goto)

Table 3.75. "Goto4" Parameters

Parameter	Value
Tag	avg_sor
Icon display	Tag
Tag visibility	global

3.11.1.1.4. "Mux" (Mux)

Table 3.76. "Mux" Parameters

Parameter	Value
Number of inputs	10
Display option	bar

3.11.1.1.5. "Mux2" (Mux)

Table 3.77. "Mux2" Parameters

Parameter	Value
Number of inputs	2

Parameter	Value
Display option	signals

3.11.1.1.6. "Mux5" (Mux)

Table 3.78. "Mux5" Parameters

Parameter	Value
Number of inputs	2
Display option	signals

3.11.1.1.7. "Mux6" (Mux)

Table 3.79. "Mux6" Parameters

Parameter	Value
Number of inputs	25
Display option	signals

3.11.1.1.8. "Router-based Average RTT" (From)

Table 3.80. "Router-based Average RTT" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c1
Icon display	Tag

3.11.1.1.9. "Router-based Average RTT1" (From)

Table 3.81. "Router-based Average RTT1" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c2
Icon display	Tag

3.11.1.1.10. "Router-based Average RTT10" (From)

Table 3.82. "Router-based Average RTT10" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c11
Icon display	Tag

3.11.1.1.11. "Router-based Average RTT11" (From)

Table 3.83. "Router-based Average RTT11" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c12
Icon display	Tag

3.11.1.1.12. "Router-based Average RTT12" (From)

Table 3.84. "Router-based Average RTT12" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c13
Icon display	Tag

3.11.1.1.13. "Router-based Average RTT13" (From)

Table 3.85. "Router-based Average RTT13" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c14
Icon display	Tag

3.11.1.1.14. "Router-based Average RTT14" (From)

Table 3.86. "Router-based Average RTT14" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c23
Icon display	Tag

3.11.1.1.15. "Router-based Average RTT15" (From)

Table 3.87. "Router-based Average RTT15" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c24
Icon display	Tag

3.11.1.1.16. "Router-based Average RTT16" (From)

Table 3.88. "Router-based Average RTT16" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c15
Icon display	Tag

3.11.1.1.17. "Router-based Average RTT17" (From)

Table 3.89. "Router-based Average RTT17" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c16
Icon display	Tag

3.11.1.1.18. "Router-based Average RTT18" (From)

Table 3.90. "Router-based Average RTT18" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c17
Icon display	Tag

3.11.1.1.19. "Router-based Average RTT19" (From)

Table 3.91. "Router-based Average RTT19" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c18
Icon display	Tag

3.11.1.1.20. "Router-based Average RTT2" (From)

Table 3.92. "Router-based Average RTT2" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c3
Icon display	Tag

3.11.1.1.21. "Router-based Average RTT20" (From)

Table 3.93. "Router-based Average RTT20" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c19
Icon display	Tag

3.11.1.1.22. "Router-based Average RTT21" (From)

Table 3.94. "Router-based Average RTT21" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c20
Icon display	Tag

3.11.1.1.23. "Router-based Average RTT22" (From)

Table 3.95. "Router-based Average RTT22" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c21
Icon display	Tag

3.11.1.1.24. "Router-based Average RTT23" (From)

Table 3.96. "Router-based Average RTT23" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c22
Icon display	Tag

3.11.1.1.25. "Router-based Average RTT24" (From)

Table 3.97. "Router-based Average RTT24" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c25
Icon display	Tag

3.11.1.1.26. "Router-based Average RTT25" (From)

Table 3.98. "Router-based Average RTT25" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c1
Icon display	Tag

3.11.1.1.27. "Router-based Average RTT26" (From)

Table 3.99. "Router-based Average RTT26" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c2
Icon display	Tag

3.11.1.1.28. "Router-based Average RTT27" (From)

Table 3.100. "Router-based Average RTT27" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c11
Icon display	Tag

3.11.1.1.29. "Router-based Average RTT28" (From)

Table 3.101. "Router-based Average RTT28" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c12
Icon display	Tag

3.11.1.1.30. "Router-based Average RTT29" (From)

Table 3.102. "Router-based Average RTT29" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c13
Icon display	Tag

3.11.1.1.31. "Router-based Average RTT3" (From)

Table 3.103. "Router-based Average RTT3" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c4
Icon display	Tag

3.11.1.1.32. "Router-based Average RTT30" (From)

Table 3.104. "Router-based Average RTT30" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c14
Icon display	Tag

3.11.1.1.33. "Router-based Average RTT31" (From)

Table 3.105. "Router-based Average RTT31" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c23
Icon display	Tag

3.11.1.1.34. "Router-based Average RTT32" (From)

Table 3.106. "Router-based Average RTT32" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c24
Icon display	Tag

3.11.1.1.35. "Router-based Average RTT33" (From)

Table 3.107. "Router-based Average RTT33" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c15
Icon display	Tag

3.11.1.1.36. "Router-based Average RTT34" (From)

Table 3.108. "Router-based Average RTT34" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c16
Icon display	Tag

3.11.1.1.37. "Router-based Average RTT35" (From)

Table 3.109. "Router-based Average RTT35" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c17
Icon display	Tag

3.11.1.1.38. "Router-based Average RTT36" (From)

Table 3.110. "Router-based Average RTT36" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c18
Icon display	Tag

3.11.1.1.39. "Router-based Average RTT37" (From)

Table 3.111. "Router-based Average RTT37" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c3
Icon display	Tag

3.11.1.1.40. "Router-based Average RTT38" (From)

Table 3.112. "Router-based Average RTT38" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c19
Icon display	Tag

3.11.1.1.41. "Router-based Average RTT39" (From)

Table 3.113. "Router-based Average RTT39" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c20
Icon display	Tag

3.11.1.1.42. "Router-based Average RTT4" (From)

Table 3.114. "Router-based Average RTT4" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c5
Icon display	Tag

3.11.1.1.43. "Router-based Average RTT40" (From)

Table 3.115. "Router-based Average RTT40" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c21
Icon display	Tag

3.11.1.1.44. "Router-based Average RTT41" (From)

Table 3.116. "Router-based Average RTT41" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c22
Icon display	Tag

3.11.1.1.45. "Router-based Average RTT42" (From)

Table 3.117. "Router-based Average RTT42" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c25
Icon display	Tag

3.11.1.1.46. "Router-based Average RTT43" (From)

Table 3.118. "Router-based Average RTT43" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c4
Icon display	Tag

3.11.1.1.47. "Router-based Average RTT44" (From)

Table 3.119. "Router-based Average RTT44" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c5
Icon display	Tag

3.11.1.1.48. "Router-based Average RTT45" (From)

Table 3.120. "Router-based Average RTT45" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c6
Icon display	Tag

3.11.1.1.49. "Router-based Average RTT46" (From)

Table 3.121. "Router-based Average RTT46" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c7
Icon display	Tag

3.11.1.1.50. "Router-based Average RTT47" (From)

Table 3.122. "Router-based Average RTT47" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c8
Icon display	Tag

3.11.1.1.51. "Router-based Average RTT48" (From)

Table 3.123. "Router-based Average RTT48" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c9
Icon display	Tag

3.11.1.1.52. "Router-based Average RTT49" (From)

Table 3.124. "Router-based Average RTT49" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c10
Icon display	Tag

3.11.1.1.53. "Router-based Average RTT5" (From)

Table 3.125. "Router-based Average RTT5" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c6
Icon display	Tag

3.11.1.1.54. "Router-based Average RTT50" (From)

Table 3.126. "Router-based Average RTT50" Parameters

Parameter	Value
Goto tag	num_client
Icon display	Tag

3.11.1.1.55. "Router-based Average RTT6" (From)

Table 3.127. "Router-based Average RTT6" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c7
Icon display	Tag

3.11.1.1.56. "Router-based Average RTT7" (From)

Table 3.128. "Router-based Average RTT7" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c8
Icon display	Tag

3.11.1.1.57. "Router-based Average RTT8" (From)

Table 3.129. "Router-based Average RTT8" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c9
Icon display	Tag

3.11.1.1.58. "Router-based Average RTT9" (From)

Table 3.130. "Router-based Average RTT9" Parameters

Parameter	Value
Goto tag	sor_av_rtt_c10
Icon display	Tag

3.11.1.1.59. "Subtract" (Sum)

Table 3.131. "Subtract" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	+-
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off

Parameter	Value
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

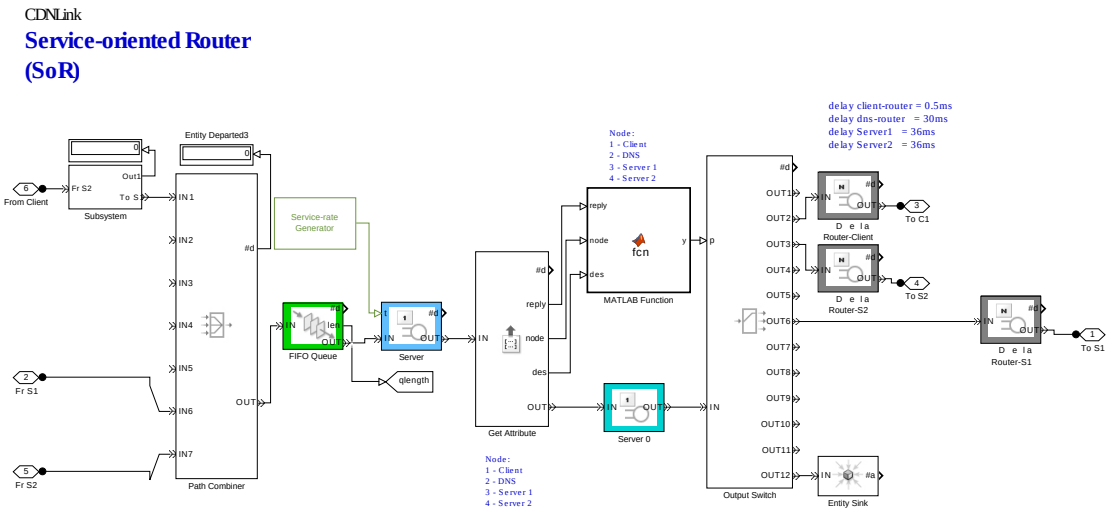
3.11.1.1.60. "To File" (ToFile)

Table 3.132. "To File" Parameters

Parameter	Value
File name	sor_avgrtt5_25.mat
Variable name	sor_avgrtt5_25
Save format	Array
Decimation	2
Sample time (-1 for inherited)	-1

3.12. Router 1

Figure 3.12. cdnlink_router/Router 1



3.12.1. Blocks

3.12.1.1. Parameters

3.12.1.1.1. "AvgDelay SQ3" (Display)

Table 3.133. "AvgDelay SQ3" Parameters

Parameter	Value
Format	long
Decimation	1
Floating display	off

3.12.1.1.2. "Delay Router-Client" (NServer)

Table 3.134. "Delay Router-Client" Parameters

Parameter	Value
Number of servers	10000
Service time from	Dialog
Service time	0.0005
Attribute name	ServiceTime
Service completion event priority	500
Allow service control	off
Service change upon disabling	Pause
Block entity entry to disabled servers	off
Control event priority	2300
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in block, #n	off
Pending entity present in block, pe	off
Number of pending entities, #pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off
Server occupancy, so	off

3.12.1.1.3. "Delay Router-S1" (NServer)

Table 3.135. "Delay Router-S1" Parameters

Parameter	Value
Number of servers	10000
Service time from	Dialog
Service time	0.036
Attribute name	ServiceTime
Service completion event priority	500
Allow service control	off
Service change upon disabling	Pause
Block entity entry to disabled servers	off
Control event priority	2300
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in block, #n	off
Pending entity present in block, pe	off
Number of pending entities, #pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off
Server occupancy, so	off

3.12.1.1.4. "Delay Router-S2" (NServer)

Table 3.136. "Delay Router-S2" Parameters

Parameter	Value
Number of servers	10000
Service time from	Dialog
Service time	0.036
Attribute name	ServiceTime

Parameter	Value
Service completion event priority	500
Allow service control	off
Service change upon disabling	Pause
Block entity entry to disabled servers	off
Control event priority	2300
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in block, #n	off
Pending entity present in block, pe	off
Number of pending entities, #pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off
Server occupancy, so	off

3.12.1.1.5. "Entity Departed3" (Display)

Table 3.137. "Entity Departed3" Parameters

Parameter	Value
Format	long
Decimation	1
Floating display	off

3.12.1.1.6. "Entity Sink" (EntitySink)

Table 3.138. "Entity Sink" Parameters

Parameter	Value
Input port available for entity arrivals	on
Report number of entities arrived, #a	on

3.12.1.1.7. "FIFO Queue" (FIFOQueue)

Table 3.139. "FIFO Queue" Parameters

Parameter	Value
Capacity	2000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in queue, #n	off
Average wait, w	off
Average queue length, len	on
Number of entities timed-out, #to	off

3.12.1.1.8. "Fr S1" (PMIOPort)

Table 3.140. "Fr S1" Parameters

Parameter	Value
Port number	2
Port location on parent subsystem	Right

3.12.1.1.9. "Fr S2" (PMIOPort)

Table 3.141. "Fr S2" Parameters

Parameter	Value
Port number	5
Port location on parent subsystem	Right

3.12.1.1.10. "From Client" (PMIOPort)

Table 3.142. "From Client" Parameters

Parameter	Value
Port number	6

Parameter	Value
Port location on parent subsystem	Left

3.12.1.1.11. "Get Attribute" (GetAttribute)

Table 3.143. "Get Attribute" Parameters

Parameter	Value
Attribute names	reply|node|des
If attributes are missing	Error|Error|Error
Attribute default values	1|1|1
Treat vector attributes as 1-D	1|1|1
Number of entities depar-ted, #d	on

3.12.1.1.12. "Goto2" (Goto)

Table 3.144. "Goto2" Parameters

Parameter	Value
Tag	qlength
Icon display	Tag
Tag visibility	global

3.12.1.1.13. "MATLAB Function" (MATLAB Function)

Table 3.145. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.146. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
y	Output	1	double	1
reply	Input	1	double	1
node	Input	2	double	1
des	Input	3	double	1

MATLAB Function Function Script

```
function y = fcn(reply, node, des)

y = nan;

if node == 1 && reply == 1
    if des == 2
        y = 8;
    else
    if des == 3
        y = 6;
    else
    if des == 4
        y = 3;

    end;
    end;
    end;

else
if node == 2 && reply == 2
    if des == 1
        y = 2;
    else
        y = 12;
    end;

else
if node == 3 && reply == 2
    if des == 1
        y = 2;
    else
        y = 12;
    end;
else
    y = 12;



end;
end;
end;
```

3.12.1.1.14. "Output Switch" (OutputSwitch)

Table 3.147. "Output Switch" Parameters

Parameter	Value
Number of entity output ports	12
Switching criterion	From signal port p
Initial seed	34567
Attribute name	cluster
Specify initial port selection	off
Initial port selection	1
Store entity before switching	off
Resolve simultaneous signal updates according to event priority	off
Event priority	4000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities timed-out, #to	off
Pending entity present in block, pe	off
Last entity departure port, last	off

3.12.1.1.15. "Path Combiner" (PathCombiner)

Table 3.148. "Path Combiner" Parameters

Parameter	Value
Number of entity input ports	7
Input port precedence	IN1 port
Initial seed	45675
Resolve simultaneous signal updates according to event priority	off

Parameter	Value
Event priority	4100
Number of entities departed, #d	on
Last entity arrival port, last	off

3.12.1.1.16. "Server" (SingleServer)

Table 3.149. "Server" Parameters

Parameter	Value
Service time from	Signal port t
Service time	0.0006
Attribute name	ServiceTimeRDC1
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in block, #n	off
Number of entities preempted, #p	off
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off

3.12.1.1.17. "Server 0" (SingleServer)

Table 3.150. "Server 0" Parameters

Parameter	Value
Service time from	Dialog
Service time	0
Attribute name	ServiceTimeDNS
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off

3.12.1.1.18. "To C1" (PMIOPort)

Table 3.151. "To C1" Parameters

Parameter	Value
Port number	3
Port location on parent subsystem	Left

3.12.1.1.19. "To S1" (PMIOPort)

Table 3.152. "To S1" Parameters

Parameter	Value
Port number	1
Port location on parent subsystem	Right

3.12.1.1.20. "To S2" (PMIOPort)

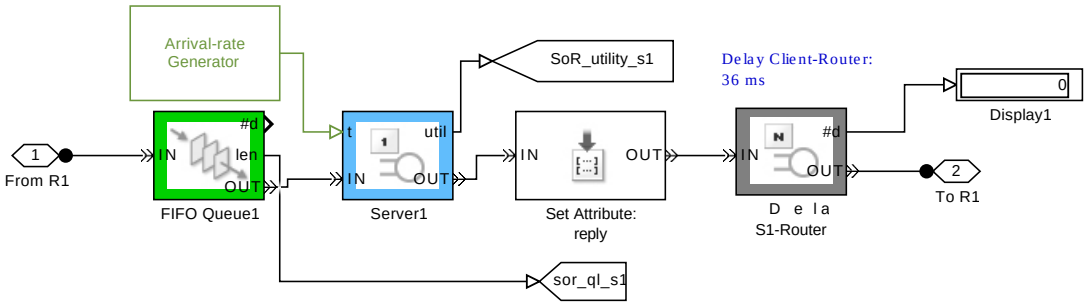
Table 3.153. "To S2" Parameters

Parameter	Value
Port number	4
Port location on parent subsystem	Right

3.13. Server 1

Figure 3.13. cdnlink_router/Server 1

C D N
Server 1



3.13.1. Blocks

3.13.1.1. Parameters

3.13.1.1.1. "Delay S1-Router" (NServer)

Table 3.154. "Delay S1-Router" Parameters

Parameter	Value
Number of servers	10000

Parameter	Value
Service time from	Dialog
Service time	0.036
Attribute name	ServiceTime
Service completion event priority	500
Allow service control	off
Service change upon disabling	Pause
Block entity entry to disabled servers	off
Control event priority	2300
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in block, #n	off
Pending entity present in block, pe	off
Number of pending entities, #pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off
Server occupancy, so	off

3.13.1.1.2. "Display1" (Display)

Table 3.155. "Display1" Parameters

Parameter	Value
Format	short
Decimation	1
Floating display	off

3.13.1.1.3. "FIFO Queue1" (FIFOQueue)

Table 3.156. "FIFO Queue1" Parameters

Parameter	Value
Capacity	2000

Parameter	Value
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in queue, #n	off
Average wait, w	off
Average queue length, len	on
Number of entities timed-out, #to	off

3.13.1.1.4. "From R1" (PMIOPort)

Table 3.157. "From R1" Parameters

Parameter	Value
Port number	1
Port location on parent subsystem	Left

3.13.1.1.5. "Goto1" (Goto)

Table 3.158. "Goto1" Parameters

Parameter	Value
Tag	SoR_utility_s1
Icon display	Tag
Tag visibility	global

3.13.1.1.6. "Goto3" (Goto)

Table 3.159. "Goto3" Parameters

Parameter	Value
Tag	sor_ql_s1
Icon display	Tag
Tag visibility	global

3.13.1.1.7. "Server1" (SingleServer)

Table 3.160. "Server1" Parameters

Parameter	Value
Service time from	Signal port t
Service time	0.0006
Attribute name	ServiceTimeRDC1
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	on
Number of entities timed-out, #to	off

3.13.1.1.8. "Set Attribute: reply" (SetAttribute)

Table 3.161. "Set Attribute: reply" Parameters

Parameter	Value
Attribute names	reply|node|des
Attributes from	Dialog|Dialog|Dialog
Attribute values	2|3|1
Treat vectors as 1-D	1|1|1

Parameter	Value
Create attributes if not present	off
Number of entities departed, #d	off

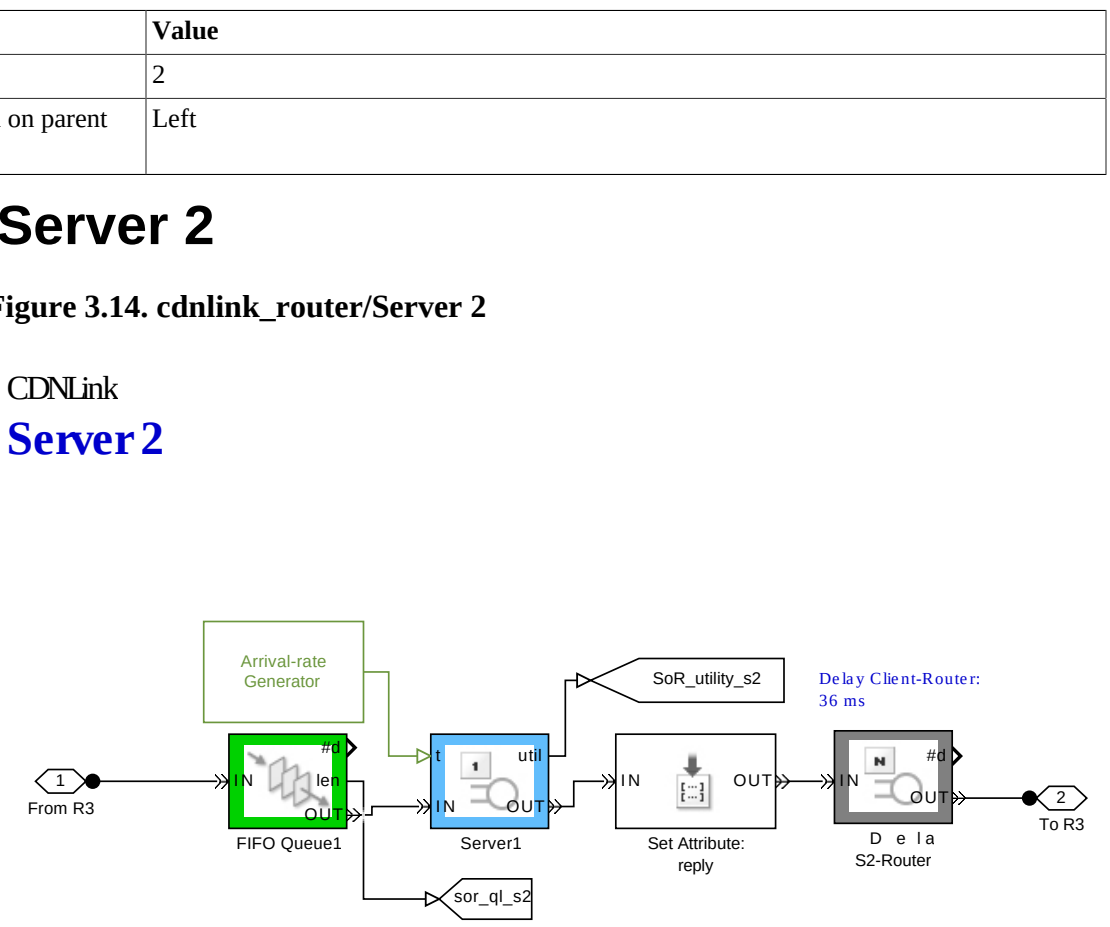
3.13.1.1.9. "To R1" (PMIOPort)

Table 3.162. "To R1" Parameters

Parameter	Value
Port number	2
Port location on parent subsystem	Left

3.14. Server 2

Figure 3.14. cdnlink_router/Server 2



3.14.1. Blocks

3.14.1.1. Parameters

3.14.1.1.1. "Delay S2-Router" (NServer)

Table 3.163. "Delay S2-Router" Parameters

Parameter	Value
Number of servers	10000

Parameter	Value
Service time from	Dialog
Service time	0.036
Attribute name	ServiceTime
Service completion event priority	500
Allow service control	off
Service change upon disabling	Pause
Block entity entry to disabled servers	off
Control event priority	2300
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in block, #n	off
Pending entity present in block, pe	off
Number of pending entities, #pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off
Server occupancy, so	off

3.14.1.1.2. "FIFO Queue1" (FIFOQueue)

Table 3.164. "FIFO Queue1" Parameters

Parameter	Value
Capacity	2000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in queue, #n	off
Average wait, w	off
Average queue length, len	on

Parameter	Value
Number of entities time-d-out, #to	off

3.14.1.1.3. "From R3" (PMIOPort)

Table 3.165. "From R3" Parameters

Parameter	Value
Port number	1
Port location on parent subsystem	Left

3.14.1.1.4. "Goto1" (Goto)

Table 3.166. "Goto1" Parameters

Parameter	Value
Tag	SoR_utility_s2
Icon display	Tag
Tag visibility	global

3.14.1.1.5. "Goto3" (Goto)

Table 3.167. "Goto3" Parameters

Parameter	Value
Tag	sor_ql_s2
Icon display	Tag
Tag visibility	global

3.14.1.1.6. "Server1" (SingleServer)

Table 3.168. "Server1" Parameters

Parameter	Value
Service time from	Signal port t
Service time	0.0006
Attribute name	ServiceTimeRDC1

Parameter	Value
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	on
Number of entities timed-out, #to	off

3.14.1.1.7. "Set Attribute: reply" (SetAttribute)

Table 3.169. "Set Attribute: reply" Parameters

Parameter	Value
Attribute names	reply|node|des
Attributes from	Dialog|Dialog|Dialog
Attribute values	2|3|1
Treat vectors as 1-D	1|1|1
Create attributes if not present	off
Number of entities departed, #d	off

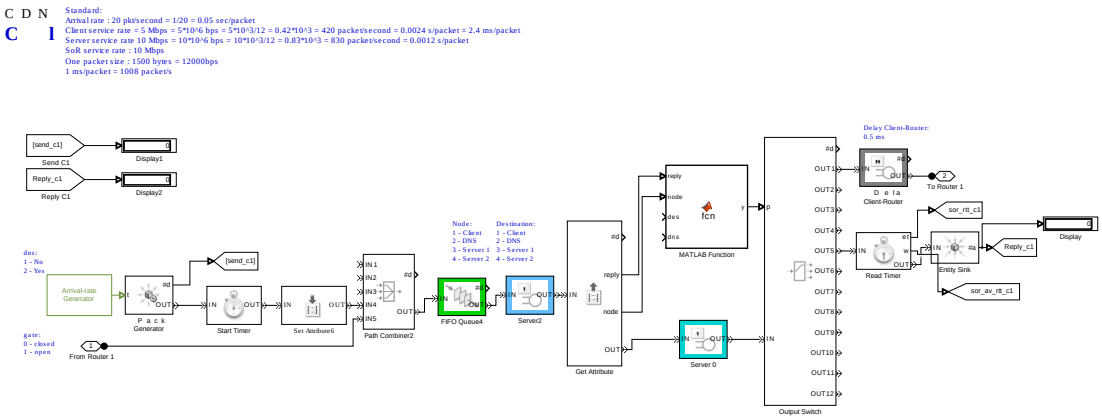
3.14.1.1.8. "To R3" (PMIOPort)

Table 3.170. "To R3" Parameters

Parameter	Value
Port number	2
Port location on parent subsystem	Left

3.15. SoR Client 1

Figure 3.15. cdnlink_router/Client 1/SoR Client 1



3.15.1. Blocks

3.15.1.1. Parameters

3.15.1.1.1. "Delay Client-Router" (NServer)

Table 3.171. "Delay Client-Router" Parameters

Parameter	Value
Number of servers	10000
Service time from	Dialog
Service time	0.0005
Attribute name	ServiceTime
Service completion event priority	500
Allow service control	off
Service change upon disabling	Pause
Block entity entry to disabled servers	off

Parameter	Value
Control event priority	2300
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in block, #n	off
Pending entity present in block, pe	off
Number of pending entities, #pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off
Server occupancy, so	off

3.15.1.1.2. "Display" (Display)

Table 3.172. "Display" Parameters

Parameter	Value
Format	short
Decimation	1
Floating display	off

3.15.1.1.3. "Display1" (Display)

Table 3.173. "Display1" Parameters

Parameter	Value
Format	short
Decimation	1
Floating display	off

3.15.1.1.4. "Display2" (Display)

Table 3.174. "Display2" Parameters

Parameter	Value
Format	short

Parameter	Value
Decimation	1
Floating display	off

3.15.1.1.5. "Entity Sink" (EntitySink)

Table 3.175. "Entity Sink" Parameters

Parameter	Value
Input port available for entity arrivals	on
Report number of entities arrived, #a	on

3.15.1.1.6. "FIFO Queue4" (FIFOQueue)

Table 3.176. "FIFO Queue4" Parameters

Parameter	Value
Capacity	2000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in queue, #n	off
Average wait, w	off
Average queue length, len	off
Number of entities timed-out, #to	off

3.15.1.1.7. "From Router 1" (PMIOPort)

Table 3.177. "From Router 1" Parameters

Parameter	Value
Port number	1
Port location on parent subsystem	Left

3.15.1.1.8. "Get Attribute" (GetAttribute)

Table 3.178. "Get Attribute" Parameters

Parameter	Value
Attribute names	reply|node
If attributes are missing	Error|Error
Attribute default values	1|1
Treat vector attributes as 1-D	1|1
Number of entities departed, #d	on

3.15.1.1.9. "Goto1" (Goto)

Table 3.179. "Goto1" Parameters

Parameter	Value
Tag	send_c1
Icon display	Tag
Tag visibility	local

3.15.1.1.10. "Goto2" (Goto)

Table 3.180. "Goto2" Parameters

Parameter	Value
Tag	Reply_c1
Icon display	Tag
Tag visibility	global

3.15.1.1.11. "Goto3" (Goto)

Table 3.181. "Goto3" Parameters

Parameter	Value
Tag	sor_rtt_c1
Icon display	Tag
Tag visibility	global

3.15.1.1.12. "Goto4" (Goto)

Table 3.182. "Goto4" Parameters

Parameter	Value
Tag	sor_av_rtt_c1
Icon display	Tag
Tag visibility	global

3.15.1.1.13. "MATLAB Function" (MATLAB Function)

Table 3.183. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.184. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
y	Output	1	double	1
reply	Input	1	double	1
node	Input	2	double	1
des	Input	3	double	1
dns	Input	4	double	1

MATLAB Function Function Script

```
function y = fcn(reply, node, des, dns)

y = nan;

%if agent == 1
if reply == 1
    y = 1;

else
```

```
if reply == 2
    y = 5;
%    if dns == 1
%        y = 9;
%    else
%        y = 5;
%    end
%        end
%    end

% else
% %if agent == 2
%     if reply == 1
%         y = 1;
%     else
%     if reply == 2
%         y = 9;
% %    end
% %    end


else
    y = 12;

end;
end;









% ****
% if agent == 1
%     if reply == 1
%         y = 1;
%     else
%         if reply == 2
%         y = 5;
%         end
%     end
%
% else
% if agent == 2
%     if reply == 1
%         y = 1;
%     else
%     if reply == 2
%         y = 9;
%     end
%     end
%
%
```

```
% else
%     y = 12;
%
% end;
% end;
```

3.15.1.1.14. "Output Switch" (OutputSwitch)

Table 3.185. "Output Switch" Parameters

Parameter	Value
Number of entity output ports	12
Switching criterion	From signal port p
Initial seed	34567
Attribute name	cluster
Specify initial port selection	off
Initial port selection	1
Store entity before switching	off
Resolve simultaneous signal updates according to event priority	off
Event priority	4000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities timed-out, #to	off
Pending entity present in block, pe	off
Last entity departure port, last	off

3.15.1.1.15. "Packet Generator" (TimeBasedEntityGenerator)

Table 3.186. "Packet Generator" Parameters

Parameter	Value
Generate entities upon	Intergeneration time from port t
Distribution	Exponential

Parameter	Value
Period	0.05
Initial seed	1234
Minimum	0
Maximum	1
Mean	0.05
Generation event priority	300
Generate entity at simulation start	on
Response when blocked	Error
Response when unblocked	Immediate restart
Entity type	Standard
Attribute names	
Attributes from	
Attribute values	
Treat vectors as 1-D	
Number of entities departed, #d	on
Pending entity present in block, pe	off
Average intergeneration time, w	off

3.15.1.1.16. "Path Combiner2" (PathCombiner)

Table 3.187. "Path Combiner2" Parameters

Parameter	Value
Number of entity input ports	5
Input port precedence	IN1 port
Initial seed	45675
Resolve simultaneous signal updates according to event priority	off
Event priority	4100
Number of entities departed, #d	on
Last entity arrival port, last	off

3.15.1.1.17. "Read Timer" (ReadTimer)

Table 3.188. "Read Timer" Parameters

Parameter	Value
Timer tag	L2C1
If entity does not have tagged timer	Error
Number of entities departed, #d	off
Number of entities departed with specified tag, #t	off
Elapsed time, et	on
Average elapsed time, w	on

3.15.1.1.18. "Reply C1" (From)

Table 3.189. "Reply C1" Parameters

Parameter	Value
Goto tag	Reply_c1
Icon display	Tag

3.15.1.1.19. "Send C1" (From)

Table 3.190. "Send C1" Parameters

Parameter	Value
Goto tag	send_c1
Icon display	Tag

3.15.1.1.20. "Server 0" (SingleServer)

Table 3.191. "Server 0" Parameters

Parameter	Value
Service time from	Dialog
Service time	0
Attribute name	ServiceTimeDNS
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName

Parameter	Value
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off

3.15.1.1.21. "Server2" (SingleServer)

Table 3.192. "Server2" Parameters

Parameter	Value
Service time from	Dialog
Service time	0
Attribute name	ServiceTimeClient
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on

Parameter	Value
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off

3.15.1.1.22. "Set Attribute6" (SetAttribute)

Table 3.193. "Set Attribute6" Parameters

Parameter	Value
Attribute names	node|reply|client
Attributes from	Dialog|Dialog|Dialog
Attribute values	1|1|1
Treat vectors as 1-D	1|1|1
Create attributes if not present	on
Number of entities departed, #d	off

3.15.1.1.23. "Start Timer" (StartTimer)

Table 3.194. "Start Timer" Parameters

Parameter	Value
Timer tag	L2C1
If timer has already started	Warn and continue
Number of entities departed, #d	off

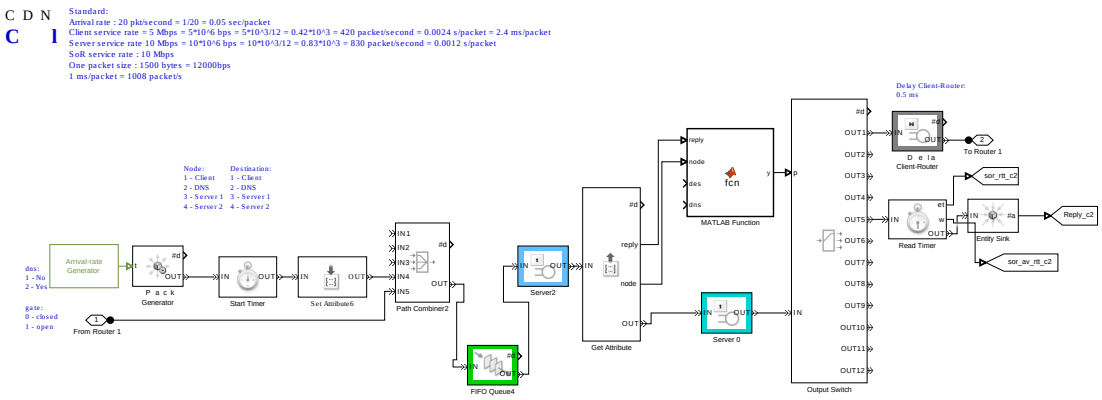
3.15.1.1.24. "To Router 1" (PMIOPort)

Table 3.195. "To Router 1" Parameters

Parameter	Value
Port number	2
Port location on parent subsystem	Right

3.16. SoR Client 2

Figure 3.16. cdnlink_router/Client 1/SoR Client 2



3.16.1. Blocks

3.16.1.1. Parameters

3.16.1.1.1. "Delay Client-Router" (NServer)

Table 3.196. "Delay Client-Router" Parameters

Parameter	Value
Number of servers	10000
Service time from	Dialog
Service time	0.0005
Attribute name	ServiceTime
Service completion event priority	500
Allow service control	off
Service change upon disabling	Pause
Block entity entry to disabled servers	off

Parameter	Value
Control event priority	2300
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in block, #n	off
Pending entity present in block, pe	off
Number of pending entities, #pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off
Server occupancy, so	off

3.16.1.1.2. "Entity Sink" (EntitySink)

Table 3.197. "Entity Sink" Parameters

Parameter	Value
Input port available for entity arrivals	on
Report number of entities arrived, #a	on

3.16.1.1.3. "FIFO Queue4" (FIFOQueue)

Table 3.198. "FIFO Queue4" Parameters

Parameter	Value
Capacity	2000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in queue, #n	off
Average wait, w	off
Average queue length, len	off

Parameter	Value
Number of entities time-d-out, #to	off

3.16.1.1.4. "From Router 1" (PMIOPort)

Table 3.199. "From Router 1" Parameters

Parameter	Value
Port number	1
Port location on parent subsystem	Left

3.16.1.1.5. "Get Attribute" (GetAttribute)

Table 3.200. "Get Attribute" Parameters

Parameter	Value
Attribute names	reply|node
If attributes are missing	Error|Error
Attribute default values	1|1
Treat vector attributes as 1-D	1|1
Number of entities depar-ted, #d	on

3.16.1.1.6. "Goto2" (Goto)

Table 3.201. "Goto2" Parameters

Parameter	Value
Tag	Reply_c2
Icon display	Tag
Tag visibility	global

3.16.1.1.7. "Goto3" (Goto)

Table 3.202. "Goto3" Parameters

Parameter	Value
Tag	sor_rtt_c2

Parameter	Value
Icon display	Tag
Tag visibility	global

3.16.1.1.8. "Goto4" (Goto)

Table 3.203. "Goto4" Parameters

Parameter	Value
Tag	sor_av_rtt_c2
Icon display	Tag
Tag visibility	global

3.16.1.1.9. "MATLAB Function" (MATLAB Function)

Table 3.204. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.205. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
y	Output	1	double	1
reply	Input	1	double	1
node	Input	2	double	1
des	Input	3	double	1
dns	Input	4	double	1

MATLAB Function Function Script

```
function y = fcn(reply, node, des, dns)
```

```
y = nan;

%if agent == 1
if reply == 1
    y = 1;

else
if reply == 2
    y = 5;
%    if dns == 1
%        y = 9;
%    else
%        y = 5;
%    end
%        end
%    end

% else
% %if agent == 2
%     if reply == 1
%         y = 1;
%     else
%     if reply == 2
%         y = 9;
% %    end
% %    end


else
    y = 12;

end;
end;









% ****
% if agent == 1
%     if reply == 1
%         y = 1;
%     else
%         if reply == 2
%         y = 5;
%         end
%     end
%
% else
% if agent == 2
%     if reply == 1
```

```
%         y = 1;
%     else
%     if reply == 2
%         y = 9;
%     end
%     end
%
%
% else
%     y = 12;
%
% end;
% end;
```

3.16.1.1.10. "Output Switch" (OutputSwitch)

Table 3.206. "Output Switch" Parameters

Parameter	Value
Number of entity output ports	12
Switching criterion	From signal port p
Initial seed	34567
Attribute name	cluster
Specify initial port selection	off
Initial port selection	1
Store entity before switching	off
Resolve simultaneous signal updates according to event priority	off
Event priority	4000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities timed-out, #to	off
Pending entity present in block, pe	off
Last entity departure port, last	off

3.16.1.1.11. "Packet Generator" (TimeBasedEntityGenerator)

Table 3.207. "Packet Generator" Parameters

Parameter	Value
Generate entities upon	Intergeneration time from port t
Distribution	Exponential
Period	0.05
Initial seed	1234
Minimum	0
Maximum	1
Mean	0.05
Generation event priority	300
Generate entity at simulation start	on
Response when blocked	Error
Response when unblocked	Immediate restart
Entity type	Standard
Attribute names	
Attributes from	
Attribute values	
Treat vectors as 1-D	
Number of entities departed, #d	on
Pending entity present in block, pe	off
Average intergeneration time, w	off

3.16.1.1.12. "Path Combiner2" (PathCombiner)

Table 3.208. "Path Combiner2" Parameters

Parameter	Value
Number of entity input ports	5
Input port precedence	IN1 port
Initial seed	45675
Resolve simultaneous signal updates according to event priority	off

Parameter	Value
Event priority	4100
Number of entities departed, #d	on
Last entity arrival port, last	off

3.16.1.1.13. "Read Timer" (ReadTimer)

Table 3.209. "Read Timer" Parameters

Parameter	Value
Timer tag	L2C1
If entity does not have tagged timer	Error
Number of entities departed, #d	off
Number of entities departed with specified tag, #t	off
Elapsed time, et	on
Average elapsed time, w	on

3.16.1.1.14. "Server 0" (SingleServer)

Table 3.210. "Server 0" Parameters

Parameter	Value
Service time from	Dialog
Service time	0
Attribute name	ServiceTimeDNS
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on

Parameter	Value
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off

3.16.1.1.15. "Server2" (SingleServer)

Table 3.211. "Server2" Parameters

Parameter	Value
Service time from	Dialog
Service time	0
Attribute name	ServiceTimeClient
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off

Parameter	Value
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	off
Number of entities time-d-out, #to	off

3.16.1.1.16. "Set Attribute6" (SetAttribute)

Table 3.212. "Set Attribute6" Parameters

Parameter	Value
Attribute names	node|reply|client
Attributes from	Dialog|Dialog|Dialog
Attribute values	1|1|2
Treat vectors as 1-D	1|1|1
Create attributes if not present	on
Number of entities depar-ted, #d	off

3.16.1.1.17. "Start Timer" (StartTimer)

Table 3.213. "Start Timer" Parameters

Parameter	Value
Timer tag	L2C1
If timer has already start-ed	Warn and continue
Number of entities depar-ted, #d	off

3.16.1.1.18. "To Router 1" (PMIOPort)

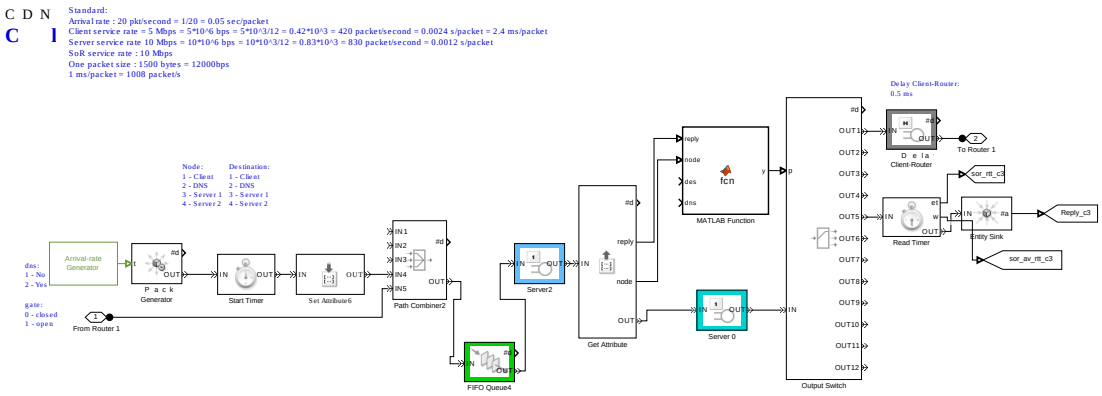
Table 3.214. "To Router 1" Parameters

Parameter	Value
Port number	2

Parameter	Value
Port location on parent subsystem	Right

3.17. SoR Client 3

Figure 3.17. cdnlink_router/Client 1/SoR Client 3



3.17.1. Blocks

3.17.1.1. Parameters

3.17.1.1.1. "Delay Client-Router" (NServer)

Table 3.215. "Delay Client-Router" Parameters

Parameter	Value
Number of servers	10000
Service time from	Dialog
Service time	0.0005
Attribute name	ServiceTime
Service completion event priority	500
Allow service control	off
Service change upon disabling	Pause
Block entity entry to disabled servers	off
Control event priority	2300
Enable TO port for timed-out entities	off

Parameter	Value
Number of entities departed, #d	on
Number of entities in block, #n	off
Pending entity present in block, pe	off
Number of pending entities, #pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off
Server occupancy, so	off

3.17.1.1.2. "Entity Sink" (EntitySink)

Table 3.216. "Entity Sink" Parameters

Parameter	Value
Input port available for entity arrivals	on
Report number of entities arrived, #a	on

3.17.1.1.3. "FIFO Queue4" (FIFOQueue)

Table 3.217. "FIFO Queue4" Parameters

Parameter	Value
Capacity	2000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in queue, #n	off
Average wait, w	off
Average queue length, len	off
Number of entities timed-out, #to	off

3.17.1.1.4. "From Router 1" (PMIOPort)

Table 3.218. "From Router 1" Parameters

Parameter	Value
Port number	1
Port location on parent subsystem	Left

3.17.1.1.5. "Get Attribute" (GetAttribute)

Table 3.219. "Get Attribute" Parameters

Parameter	Value
Attribute names	reply|node
If attributes are missing	Error|Error
Attribute default values	1|1
Treat vector attributes as 1-D	1|1
Number of entities depar-ted, #d	on

3.17.1.1.6. "Goto2" (Goto)

Table 3.220. "Goto2" Parameters

Parameter	Value
Tag	Reply_c3
Icon display	Tag
Tag visibility	global

3.17.1.1.7. "Goto3" (Goto)

Table 3.221. "Goto3" Parameters

Parameter	Value
Tag	sor_rtt_c3
Icon display	Tag

Parameter	Value
Tag visibility	global

3.17.1.1.8. "Goto4" (Goto)

Table 3.222. "Goto4" Parameters

Parameter	Value
Tag	sor_av_rtt_c3
Icon display	Tag
Tag visibility	global

3.17.1.1.9. "MATLAB Function" (MATLAB Function)

Table 3.223. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.224. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
y	Output	1	double	1
reply	Input	1	double	1
node	Input	2	double	1
des	Input	3	double	1
dns	Input	4	double	1

MATLAB Function Function Script

```
function y = fcn(reply, node, des, dns)
```

```
y = nan;

%if agent == 1
if reply == 1
    y = 1;

else
if reply == 2
    y = 5;
%    if dns == 1
%        y = 9;
%    else
%        y = 5;
%    end
%        end
%    end

% else
% %if agent == 2
%     if reply == 1
%         y = 1;
%     else
%     if reply == 2
%         y = 9;
% %    end
% %    end


else
    y = 12;

end;
end;









% ****
% if agent == 1
%     if reply == 1
%         y = 1;
%     else
%         if reply == 2
%         y = 5;
%         end
%     end
%
% else
% if agent == 2
%     if reply == 1
```

```
%         y = 1;
%     else
%     if reply == 2
%         y = 9;
%     end
%     end
%
%
% else
%     y = 12;
%
% end;
% end;
```

3.17.1.1.10. "Output Switch" (OutputSwitch)

Table 3.225. "Output Switch" Parameters

Parameter	Value
Number of entity output ports	12
Switching criterion	From signal port p
Initial seed	34567
Attribute name	cluster
Specify initial port selection	off
Initial port selection	1
Store entity before switching	off
Resolve simultaneous signal updates according to event priority	off
Event priority	4000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities timed-out, #to	off
Pending entity present in block, pe	off
Last entity departure port, last	off

3.17.1.1.11. "Packet Generator" (TimeBasedEntityGenerator)

Table 3.226. "Packet Generator" Parameters

Parameter	Value
Generate entities upon	Intergeneration time from port t
Distribution	Exponential
Period	0.05
Initial seed	1234
Minimum	0
Maximum	1
Mean	0.05
Generation event priority	300
Generate entity at simulation start	on
Response when blocked	Error
Response when unblocked	Immediate restart
Entity type	Standard
Attribute names	
Attributes from	
Attribute values	
Treat vectors as 1-D	
Number of entities departed, #d	on
Pending entity present in block, pe	off
Average intergeneration time, w	off

3.17.1.1.12. "Path Combiner2" (PathCombiner)

Table 3.227. "Path Combiner2" Parameters

Parameter	Value
Number of entity input ports	5
Input port precedence	IN1 port
Initial seed	45675
Resolve simultaneous signal updates according to event priority	off

Parameter	Value
Event priority	4100
Number of entities departed, #d	on
Last entity arrival port, last	off

3.17.1.1.13. "Read Timer" (ReadTimer)

Table 3.228. "Read Timer" Parameters

Parameter	Value
Timer tag	L2C1
If entity does not have tagged timer	Error
Number of entities departed, #d	off
Number of entities departed with specified tag, #t	off
Elapsed time, et	on
Average elapsed time, w	on

3.17.1.1.14. "Server 0" (SingleServer)

Table 3.229. "Server 0" Parameters

Parameter	Value
Service time from	Dialog
Service time	0
Attribute name	ServiceTimeDNS
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on

Parameter	Value
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off

3.17.1.1.15. "Server2" (SingleServer)

Table 3.230. "Server2" Parameters

Parameter	Value
Service time from	Dialog
Service time	0
Attribute name	ServiceTimeClient
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off

Parameter	Value
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	off
Number of entities time-d-out, #to	off

3.17.1.1.16. "Set Attribute6" (SetAttribute)

Table 3.231. "Set Attribute6" Parameters

Parameter	Value
Attribute names	node|reply|client
Attributes from	Dialog|Dialog|Dialog
Attribute values	1|1|3
Treat vectors as 1-D	1|1|1
Create attributes if not present	on
Number of entities depar-ted, #d	off

3.17.1.1.17. "Start Timer" (StartTimer)

Table 3.232. "Start Timer" Parameters

Parameter	Value
Timer tag	L2C1
If timer has already start-ed	Warn and continue
Number of entities depar-ted, #d	off

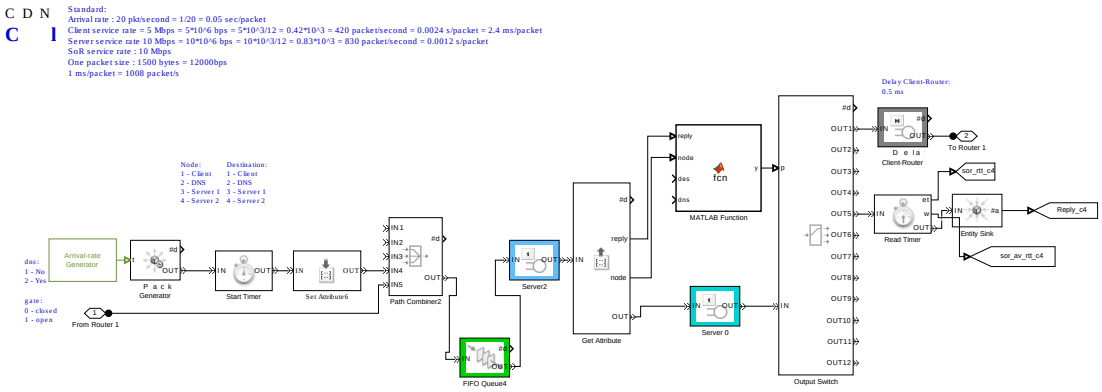
3.17.1.1.18. "To Router 1" (PMIOPort)

Table 3.233. "To Router 1" Parameters

Parameter	Value
Port number	2
Port location on parent subsystem	Right

3.18. SoR Client 4

Figure 3.18. cdnlink_router/Client 1/SoR Client 4



3.18.1. Blocks

3.18.1.1. Parameters

3.18.1.1.1. "Delay Client-Router" (NServer)

Table 3.234. "Delay Client-Router" Parameters

Parameter	Value
Number of servers	10000
Service time from	Dialog
Service time	0.0005
Attribute name	ServiceTime
Service completion event priority	500
Allow service control	off
Service change upon disabling	Pause
Block entity entry to disabled servers	off
Control event priority	2300
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in block, #n	off
Pending entity present in block, pe	off

Parameter	Value
Number of pending entities, #pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off
Server occupancy, so	off

3.18.1.1.2. "Entity Sink" (EntitySink)

Table 3.235. "Entity Sink" Parameters

Parameter	Value
Input port available for entity arrivals	on
Report number of entities arrived, #a	on

3.18.1.1.3. "FIFO Queue4" (FIFOQueue)

Table 3.236. "FIFO Queue4" Parameters

Parameter	Value
Capacity	2000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in queue, #n	off
Average wait, w	off
Average queue length, len	off
Number of entities timed-out, #to	off

3.18.1.1.4. "From Router 1" (PMIOPort)

Table 3.237. "From Router 1" Parameters

Parameter	Value
Port number	1

Parameter	Value
Port location on parent subsystem	Left

3.18.1.1.5. "Get Attribute" (GetAttribute)

Table 3.238. "Get Attribute" Parameters

Parameter	Value
Attribute names	reply|node
If attributes are missing	Error|Error
Attribute default values	1|1
Treat vector attributes as 1-D	1|1
Number of entities departed, #d	on

3.18.1.1.6. "Goto2" (Goto)

Table 3.239. "Goto2" Parameters

Parameter	Value
Tag	Reply_c4
Icon display	Tag
Tag visibility	global

3.18.1.1.7. "Goto3" (Goto)

Table 3.240. "Goto3" Parameters

Parameter	Value
Tag	sor_rtt_c4
Icon display	Tag
Tag visibility	global

3.18.1.1.8. "Goto4" (Goto)

Table 3.241. "Goto4" Parameters

Parameter	Value
Tag	sor_av_rtt_c4
Icon display	Tag

Parameter	Value
Tag visibility	global

3.18.1.1.9. "MATLAB Function" (MATLAB Function)

Table 3.242. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...)
Description	

Table 3.243. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
y	Output	1	double	1
reply	Input	1	double	1
node	Input	2	double	1
des	Input	3	double	1
dns	Input	4	double	1

MATLAB Function Function Script

```
function y = fcn(reply, node, des, dns)

y = nan;

%if agent == 1
if reply == 1
    y = 1;

else
if reply == 2
    y = 5;
%    if dns == 1
%        y = 9;
%    else
%        y = 5;
```

```
%    end
%        end
%    end

% else
% %if agent == 2
%     if reply == 1
%         y = 1;
%     else
%     if reply == 2
%         y = 9;
% %    end
% %    end


else
    y = 12;

end;
end;
```

```
% ****
% if agent == 1
%     if reply == 1
%         y = 1;
%     else
%         if reply == 2
%         y = 5;
%         end
%     end
%
% else
% if agent == 2
%     if reply == 1
%         y = 1;
%     else
%     if reply == 2
%         y = 9;
%     end
%     end
%
%
% else
%     y = 12;
%
% end;
% end;
```

3.18.1.1.10. "Output Switch" (OutputSwitch)

Table 3.244. "Output Switch" Parameters

Parameter	Value
Number of entity output ports	12
Switching criterion	From signal port p
Initial seed	34567
Attribute name	cluster
Specify initial port selection	off
Initial port selection	1
Store entity before switching	off
Resolve simultaneous signal updates according to event priority	off
Event priority	4000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities timed-out, #to	off
Pending entity present in block, pe	off
Last entity departure port, last	off

3.18.1.1.11. "Packet Generator" (TimeBasedEntityGenerator)

Table 3.245. "Packet Generator" Parameters

Parameter	Value
Generate entities upon	Intergeneration time from port t
Distribution	Exponential
Period	0.05
Initial seed	1234
Minimum	0
Maximum	1
Mean	0.05
Generation event priority	300

Parameter	Value
Generate entity at simulation start	on
Response when blocked	Error
Response when unblocked	Immediate restart
Entity type	Standard
Attribute names	
Attributes from	
Attribute values	
Treat vectors as 1-D	
Number of entities departed, #d	on
Pending entity present in block, pe	off
Average intergeneration time, w	off

3.18.1.1.12. "Path Combiner2" (PathCombiner)

Table 3.246. "Path Combiner2" Parameters

Parameter	Value
Number of entity input ports	5
Input port precedence	IN1 port
Initial seed	45675
Resolve simultaneous signal updates according to event priority	off
Event priority	4100
Number of entities departed, #d	on
Last entity arrival port, last	off

3.18.1.1.13. "Read Timer" (ReadTimer)

Table 3.247. "Read Timer" Parameters

Parameter	Value
Timer tag	L2C1
If entity does not have tagged timer	Error

Parameter	Value
Number of entities departed, #d	off
Number of entities departed with specified tag, #t	off
Elapsed time, et	on
Average elapsed time, w	on

3.18.1.1.14. "Server 0" (SingleServer)

Table 3.248. "Server 0" Parameters

Parameter	Value
Service time from	Dialog
Service time	0
Attribute name	ServiceTimeDNS
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off

3.18.1.1.15. "Server2" (SingleServer)

Table 3.249. "Server2" Parameters

Parameter	Value
Service time from	Dialog
Service time	0
Attribute name	ServiceTimeClient
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off

3.18.1.1.16. "Set Attribute6" (SetAttribute)

Table 3.250. "Set Attribute6" Parameters

Parameter	Value
Attribute names	node|reply|client
Attributes from	Dialog|Dialog|Dialog
Attribute values	1|1|4

Parameter	Value
Treat vectors as 1-D	1|1|1
Create attributes if not present	on
Number of entities departed, #d	off

3.18.1.1.17. "Start Timer" (StartTimer)

Table 3.251. "Start Timer" Parameters

Parameter	Value
Timer tag	L2C1
If timer has already started	Warn and continue
Number of entities departed, #d	off

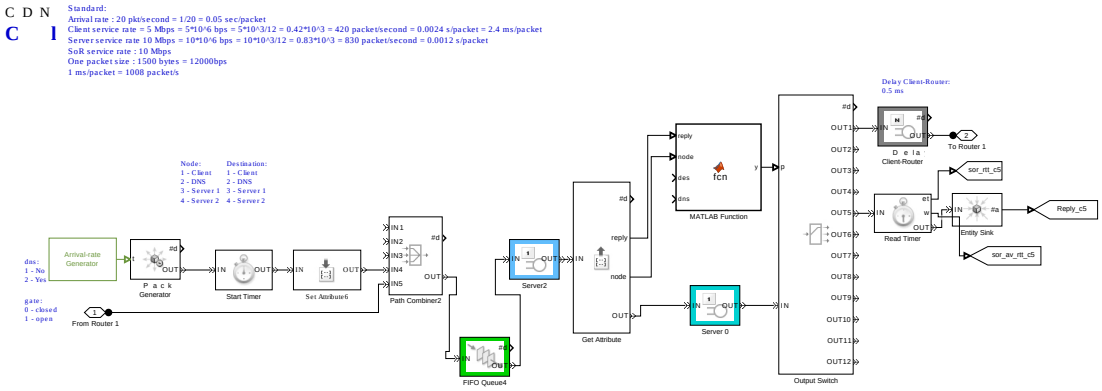
3.18.1.1.18. "To Router 1" (PMIOPort)

Table 3.252. "To Router 1" Parameters

Parameter	Value
Port number	2
Port location on parent subsystem	Right

3.19. SoR Client 5

Figure 3.19. cdnlink_router/Client 1/SoR Client 5



3.19.1. Blocks

3.19.1.1. Parameters

3.19.1.1.1. "Delay Client-Router" (NServer)

Table 3.253. "Delay Client-Router" Parameters

Parameter	Value
Number of servers	10000
Service time from	Dialog
Service time	0.0005
Attribute name	ServiceTime
Service completion event priority	500
Allow service control	off
Service change upon disabling	Pause
Block entity entry to disabled servers	off
Control event priority	2300
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in block, #n	off
Pending entity present in block, pe	off
Number of pending entities, #pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off
Server occupancy, so	off

3.19.1.1.2. "Entity Sink" (EntitySink)

Table 3.254. "Entity Sink" Parameters

Parameter	Value
Input port available for entity arrivals	on

Parameter	Value
Report number of entities arrived, #a	on

3.19.1.1.3. "FIFO Queue4" (FIFOQueue)

Table 3.255. "FIFO Queue4" Parameters

Parameter	Value
Capacity	2000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities in queue, #n	off
Average wait, w	off
Average queue length, len	off
Number of entities timed-out, #to	off

3.19.1.1.4. "From Router 1" (PMIOPort)

Table 3.256. "From Router 1" Parameters

Parameter	Value
Port number	1
Port location on parent subsystem	Left

3.19.1.1.5. "Get Attribute" (GetAttribute)

Table 3.257. "Get Attribute" Parameters

Parameter	Value
Attribute names	reply|node
If attributes are missing	Error|Error
Attribute default values	1|1
Treat vector attributes as 1-D	1|1
Number of entities departed, #d	on

3.19.1.1.6. "Goto2" (Goto)

Table 3.258. "Goto2" Parameters

Parameter	Value
Tag	Reply_c5
Icon display	Tag
Tag visibility	global

3.19.1.1.7. "Goto3" (Goto)

Table 3.259. "Goto3" Parameters

Parameter	Value
Tag	sor_rtt_c5
Icon display	Tag
Tag visibility	global

3.19.1.1.8. "Goto4" (Goto)

Table 3.260. "Goto4" Parameters

Parameter	Value
Tag	sor_av_rtt_c5
Icon display	Tag
Tag visibility	global

3.19.1.1.9. "MATLAB Function" (MATLAB Function)

Table 3.261. MATLAB Function Function Properties

Property	Value
Update Method	INHERITED
Sample Time	
Support variable-size arrays	1
Saturate on integer overflow	1
Treat these inherited Simulink signal types as fi objects	Fixed-point
Input fi math	fimath(...

Property	Value
	)
Description	

Table 3.262. MATLAB Function Argument Summary

Name	Scope	Port	Data Type	Size
y	Output	1	double	1
reply	Input	1	double	1
node	Input	2	double	1
des	Input	3	double	1
dns	Input	4	double	1

MATLAB Function Function Script

```
function y = fcn(reply, node, des, dns)

y = nan;

%if agent == 1
if reply == 1
    y = 1;

else
if reply == 2
    y = 5;
%    if dns == 1
%        y = 9;
%    else
%        y = 5;
%    end
%        end
%    end

% else
% %if agent == 2
%     if reply == 1
%         y = 1;
%     else
%     if reply == 2
%         y = 9;
% %    end
% %    end


else
    y = 12;

end;
end;
```

```
% ****
% if agent == 1
%     if reply == 1
%         y = 1;
%     else
%         if reply == 2
%         y = 5;
%         end
%     end
%
% else
% if agent == 2
%     if reply == 1
%         y = 1;
%     else
%     if reply == 2
%         y = 9;
%     end
%     end
%
%
% else
%     y = 12;
%
% end;
% end;
```

3.19.1.1.10. "Output Switch" (OutputSwitch)

Table 3.263. "Output Switch" Parameters

Parameter	Value
Number of entity output ports	12
Switching criterion	From signal port p
Initial seed	34567
Attribute name	cluster
Specify initial port selection	off
Initial port selection	1
Store entity before switching	off

Parameter	Value
Resolve simultaneous signal updates according to event priority	off
Event priority	4000
Enable TO port for timed-out entities	off
Number of entities departed, #d	on
Number of entities timed-out, #to	off
Pending entity present in block, pe	off
Last entity departure port, last	off

3.19.1.1.11. "Packet Generator" (TimeBasedEntityGenerator)

Table 3.264. "Packet Generator" Parameters

Parameter	Value
Generate entities upon	Intergeneration time from port t
Distribution	Exponential
Period	0.05
Initial seed	1234
Minimum	0
Maximum	1
Mean	0.05
Generation event priority	300
Generate entity at simulation start	on
Response when blocked	Error
Response when unblocked	Immediate restart
Entity type	Standard
Attribute names	
Attributes from	
Attribute values	
Treat vectors as 1-D	
Number of entities departed, #d	on
Pending entity present in block, pe	off

Parameter	Value
Average intergeneration time, w	off

3.19.1.1.12. "Path Combiner2" (PathCombiner)

Table 3.265. "Path Combiner2" Parameters

Parameter	Value
Number of entity input ports	5
Input port precedence	IN1 port
Initial seed	45675
Resolve simultaneous signal updates according to event priority	off
Event priority	4100
Number of entities departed, #d	on
Last entity arrival port, last	off

3.19.1.1.13. "Read Timer" (ReadTimer)

Table 3.266. "Read Timer" Parameters

Parameter	Value
Timer tag	L2C1
If entity does not have tagged timer	Error
Number of entities departed, #d	off
Number of entities departed with specified tag, #t	off
Elapsed time, et	on
Average elapsed time, w	on

3.19.1.1.14. "Server 0" (SingleServer)

Table 3.267. "Server 0" Parameters

Parameter	Value
Service time from	Dialog

Parameter	Value
Service time	0
Attribute name	ServiceTimeDNS
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off

3.19.1.1.15. "Server2" (SingleServer)

Table 3.268. "Server2" Parameters

Parameter	Value
Service time from	Dialog
Service time	0
Attribute name	ServiceTimeClient
Service completion event priority	500
Permit preemption based on attribute	off
Sorting attribute name	PriorityAttributeName

Parameter	Value
Sorting direction	Ascending
Write residual service time to attribute	off
Residual service time attribute name	ResidualServiceTime
Create attribute if not present	on
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities in block, #n	off
Number of entities preempted, #p	off
Pending entity present in block, pe	off
Average wait, w	off
Utilization, util	off
Number of entities timed-out, #to	off

3.19.1.1.16. "Set Attribute6" (SetAttribute)

Table 3.269. "Set Attribute6" Parameters

Parameter	Value
Attribute names	node|reply|client
Attributes from	Dialog|Dialog|Dialog
Attribute values	1|1|5
Treat vectors as 1-D	1|1|1
Create attributes if not present	on
Number of entities departed, #d	off

3.19.1.1.17. "Start Timer" (StartTimer)

Table 3.270. "Start Timer" Parameters

Parameter	Value
Timer tag	L2C1

Parameter	Value
If timer has already started	Warn and continue
Number of entities departed, #d	off

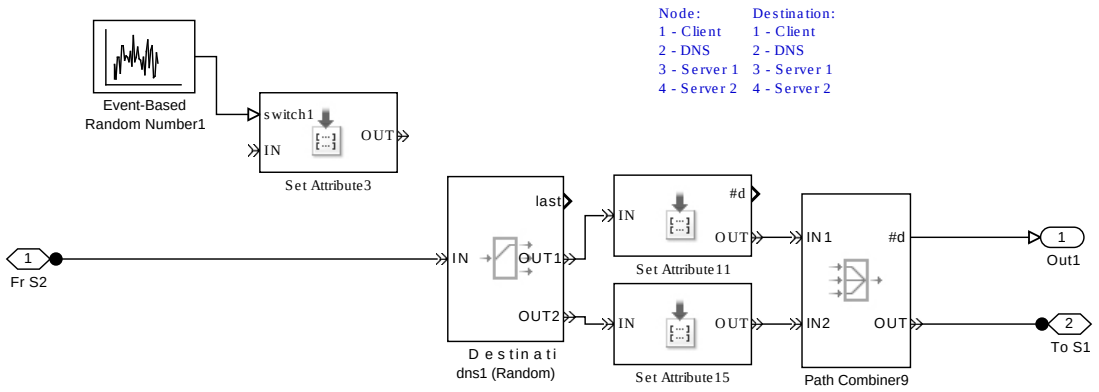
3.19.1.1.18. "To Router 1" (PMIOPort)

Table 3.271. "To Router 1" Parameters

Parameter	Value
Port number	2
Port location on parent subsystem	Right

3.20. Subsystem

Figure 3.20. cdnlink_router/Router 1/Subsystem



3.20.1. Blocks

3.20.1.1. Parameters

3.20.1.1.1. "Destination dns1 (Random)" (OutputSwitch)

Table 3.272. "Destination dns1 (Random)" Parameters

Parameter	Value
Number of entity output ports	2

Parameter	Value
Switching criterion	Equiprobable
Initial seed	34567
Attribute name	switch1
Specify initial port selection	on
Initial port selection	1
Store entity before switching	off
Resolve simultaneous signal updates according to event priority	off
Event priority	4000
Enable TO port for timed-out entities	off
Number of entities departed, #d	off
Number of entities timed-out, #to	off
Pending entity present in block, pe	off
Last entity departure port, last	on

3.20.1.1.2. "Event-Based Random Number1" (EventBasedRandomNumber)

Table 3.273. "Event-Based Random Number1" Parameters

Parameter	Value
Distribution	Arbitrary discrete
Mean	1
Minimum	0
Maximum	1
Probability for output to be 1	0.25
Probability of success in a single trial	0.5
Number of trials	1
Minimum	1
Maximum	3
Mode	2
Threshold	0

Parameter	Value
Scale	1
Shape	1
Mean	0
Standard deviation	1
Probability of success in a single trial	0.5
Mean	1
Threshold	0
Mu	1
Sigma	1
Threshold	0
Scale	1
Minimum	0
Maximum	1
Shape parameter a	1
Shape parameter b	1
Minimum	0
Maximum	1
Number of values	2
Threshold	0
Scale	1
Shape	1
Value vector	[0 1]
Cumulative probability function vector	[0 1]
Value vector	[1 2]
Probability vector	[0.5 0.5]
Initial seed	12345

3.20.1.1.3. "Fr S2" (PMIOPort)

Table 3.274. "Fr S2" Parameters

Parameter	Value
Port number	1
Port location on parent subsystem	Left

3.20.1.1.4. "Out1" (Outport)

Table 3.275. "Out1" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]

3.20.1.1.5. "Path Combiner9" (PathCombiner)

Table 3.276. "Path Combiner9" Parameters

Parameter	Value
Number of entity input ports	2
Input port precedence	IN1 port
Initial seed	45675
Resolve simultaneous signal updates according to event priority	off
Event priority	4100
Number of entities departed, #d	on
Last entity arrival port, last	off

3.20.1.1.6. "Set Attribute11" (SetAttribute)

Table 3.277. "Set Attribute11" Parameters

Parameter	Value
Attribute names	des
Attributes from	Dialog
Attribute values	3
Treat vectors as 1-D	1
Create attributes if not present	on
Number of entities departed, #d	on

3.20.1.1.7. "Set Attribute15" (SetAttribute)

Table 3.278. "Set Attribute15" Parameters

Parameter	Value
Attribute names	des
Attributes from	Dialog
Attribute values	4
Treat vectors as 1-D	1
Create attributes if not present	on
Number of entities departed, #d	off

3.20.1.1.8. "Set Attribute3" (SetAttribute)

Table 3.279. "Set Attribute3" Parameters

Parameter	Value
Attribute names	switch1
Attributes from	Signal port
Attribute values	1
Treat vectors as 1-D	1
Create attributes if not present	on
Number of entities departed, #d	off

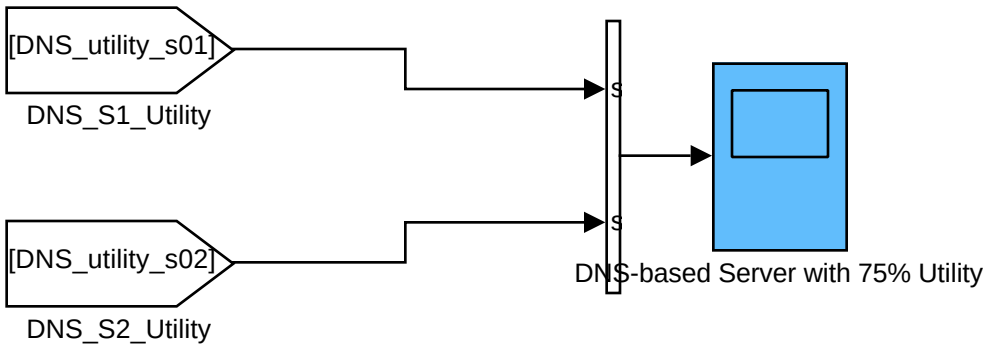
3.20.1.1.9. "To S1" (PMIOPort)

Table 3.280. "To S1" Parameters

Parameter	Value
Port number	2
Port location on parent subsystem	Right

3.21. Utilities

Figure 3.21. cdnlink_router/background/Utilities



3.21.1. Blocks

3.21.1.1. Parameters

3.21.1.1.1. "DNS_S1_Utility" (From)

Table 3.281. "DNS_S1_Utility" Parameters

Parameter	Value
Goto tag	DNS_utility_s01
Icon display	Tag

3.21.1.1.2. "DNS_S2_Utility" (From)

Table 3.282. "DNS_S2_Utility" Parameters

Parameter	Value
Goto tag	DNS_utility_s02
Icon display	Tag

3.21.1.1.3. "Mux5" (Mux)

Table 3.283. "Mux5" Parameters

Parameter	Value
Number of inputs	2
Display option	signals

Chapter 4. Requirements Traceability

cdnlink_router does not contain requirements traceability links.

Chapter 5. System Model Configuration

Table 5.1. cdnlink_router Configuration Set

Property	Value
Description	
Components	[cdnlink_router Configuration Set.Components(1-) [131], cdnlink_router Configuration Set.Components(2) [132], cdnlink_router Configuration Set.Components(3) [133], cdnlink_router Configuration Set.Components(4) [134], cdnlink_router Configuration Set.Components(5) [136], cdnlink_router Configuration Set.Components(6)- [138], cdnlink_router Configuration Set.Components(7) [138], cdnlink_router Configuration Set.Components(8) [139], cdnlink_router Configuration Set.Components(9) [141]]
Name	Configuration
SimulationMode	normal

Table 5.2. cdnlink_router Configuration Set.Components [131](1)

Property	Value
Name	Solver
Description	
Components	
StartTime	0.0
StopTime	5000
AbsTol	auto
FixedStep	auto
InitialStep	auto
MaxNumMinSteps	-1
MaxOrder	5
ZcThreshold	auto
ConsecutiveZCsStepRelTol	10*128*eps
MaxConsecutiveZCs	1000
ExtrapolationOrder	4
NumberNewtonIterations	1
MaxStep	auto
MinStep	auto
MaxConsecutiveMinStep	1
RelTol	1e-3
SolverMode	Auto

EnableConcurrentExecution	off
ConcurrentTasks	off
Solver	ode45
SolverName	ode45
SolverType	Variable-step
SolverJacobianMethodControl	auto
ShapePreserveControl	DisableAll
ZeroCrossControl	UseLocalSettings
ZeroCrossAlgorithm	Nonadaptive
SolverResetMethod	Fast
PositivePriorityOrder	off
AutoInsertRateTranBlk	off
SampleTimeConstraint	Unconstrained
InsertRTBMode	Whenever possible
SampleTimeProperty	

Table 5.3. cdnlink_router Configuration Set.Components [131](2)

Property	**Value**
Name	Data Import/Export
Description	
Components	
Decimation	1
ExternalInput	[t, u]
FinalStateName	xFinal
InitialState	xInitial
LimitDataPoints	on
MaxDataPoints	1000
LoadExternalInput	off
LoadInitialState	off
SaveFinalState	off
SaveCompleteFinalSimState	off
SaveFormat	Array
SignalLoggingSaveFormat	ModelDataLogs
SaveOutput	on
SaveState	off
SignalLogging	on
DSMLogging	on
InspectSignalLogs	off
VisualizeSimOutput	on

SaveTime	on
ReturnWorkspaceOutputs	off
StateSaveName	xout
TimeSaveName	tout
OutputSaveName	yout
SignalLoggingName	logsout
DSMLoggingName	dsmout
OutputOption	RefineOutputTimes
OutputTimes	[]
ReturnWorkspaceOutputsName	out
Refine	1

Table 5.4. cdnlink_router Configuration Set.Components [131](3)

Property	**Value**
Name	Optimization
Description	
Components	
BlockReduction	on
BooleanDataType	on
ConditionallyExecuteInputs	on
InlineParams	off
UseIntDivNetSlope	off
UseFloatMulNetSlope	off
DefaultUnderspecifiedDataType	double
UseSpecifiedMinMax	off
InlineInvariantSignals	off
OptimizeBlockIOStorage	on
BufferReuse	on
GlobalBufferReuse	on
GlobalVariableUsage	None
StrengthReduction	off
AdvancedOptControl	
EnforceIntegerDowncast	on
ExpressionFolding	on
BooleansAsBitfields	off
BitfieldContainerType	uint_T
EnableMemcpy	on
MemcpyThreshold	64
PassReuseOutputArgsAs	Structure reference

PassReuseOutputArgsThreshold	12
FoldNonRolledExpr	on
LocalBlockOutputs	on
RollThreshold	5
SystemCodeInlineAuto	off
StateBitsets	off
DataBitsets	off
ActiveStateOutputEnumStorageType	Native Integer
UseTempVars	off
ZeroExternalMemoryAtStartup	on
ZeroInternalMemoryAtStartup	on
InitFltsAndDblsToZero	off
NoFixptDivByZeroProtection	off
EfficientFloat2IntCast	off
EfficientMapNaN2IntZero	on
OptimizeModelRefInitCode	off
LifeSpan	inf
EvaledLifeSpan	Inf
MaxStackSize	Inherit from target
BufferReusableBoundary	on
SimCompilerOptimization	Off
AccelVerboseBuild	off
ParallelExecutionInRapidAccelerator	on

Table 5.5. cdnlink_router Configuration Set.Components [131](4)

Property	Value
Name	Diagnostics
Description	
Components	
RTPrefix	error
ConsistencyChecking	none
ArrayBoundsChecking	none
SignalInfNanChecking	none
SignalRangeChecking	none
ReadBeforeWriteMsg	UseLocalSettings
WriteAfterWriteMsg	UseLocalSettings
WriteAfterReadMsg	UseLocalSettings
AlgebraicLoopMsg	warning
ArtificialAlgebraicLoopMsg	warning

SaveWithDisabledLinksMsg	warning
SaveWithParameterizedLinksMsg	warning
CheckSSInitialOutputMsg	on
UnderspecifiedInitializationDetection	Classic
MergeDetectMultiDrivingBlocksExec	none
CheckExecutionContextPreStartOutputMsg	off
CheckExecutionContextRuntimeOutputMsg	off
SignalResolutionControl	UseLocalSettings
BlockPriorityViolationMsg	warning
MinStepSizeMsg	warning
TimeAdjustmentMsg	none
MaxConsecutiveZCsMsg	error
MaskedZcDiagnostic	warning
IgnoredZcDiagnostic	warning
SolverPrmCheckMsg	warning
InheritedTsInSrcMsg	warning
DiscreteInheritContinuousMsg	warning
MultiTaskDSMMsg	error
MultiTaskCondExecSysMsg	error
MultiTaskRateTransMsg	error
SingleTaskRateTransMsg	none
TasksWithSamePriorityMsg	warning
SigSpecEnsureSampleTimeMsg	warning
CheckMatrixSingularityMsg	none
IntegerOverflowMsg	warning
Int32ToFloatConvMsg	warning
ParameterDowncastMsg	error
ParameterOverflowMsg	error
ParameterUnderflowMsg	none
ParameterPrecisionLossMsg	warning
ParameterTunabilityLossMsg	warning
FixptConstUnderflowMsg	none
FixptConstOverflowMsg	none
FixptConstPrecisionLossMsg	none
UnderSpecifiedDataTypeMsg	none
UnnecessaryDatatypeConvMsg	none
VectorMatrixConversionMsg	none
InvalidFcnCallConnMsg	error
FcnCallInpInsideContextMsg	EnableAllAsWarning

SignalLabelMismatchMsg	none
UnconnectedInputMsg	warning
UnconnectedOutputMsg	warning
UnconnectedLineMsg	warning
SFcnCompatibilityMsg	none
FrameProcessingCompatibilityMsg	warning
UniqueDataStoreMsg	none
BusObjectLabelMismatch	warning
RootOutportRequireBusObject	warning
AssertControl	UseLocalSettings
Echo	
EnableOverflowDetection	off
ModelReferenceIOMsg	none
ModelReferenceVersionMismatchMessage	none
ModelReferenceIOMismatchMessage	none
ModelReferenceCSMismatchMessage	none
ModelReferenceSimTargetVerbose	off
UnknownTsInhSupMsg	warning
ModelReferenceDataLoggingMessage	warning
ModelReferenceSymbolNameMessage	warning
ModelReferenceExtraNoncontSigs	error
StateNameClashWarn	warning
SimStateInterfaceChecksumMismatchMsg	warning
SimStateOlderReleaseMsg	error
InitInArrayFormatMsg	warning
StrictBusMsg	ErrorLevel1
BusNameAdapt	WarnAndRepair
NonBusSignalsTreatedAsBus	none
LoggingUnavailableSignals	error
SFUnusedDataAndEventsDiag	warning
SFUnexpectedBacktrackingDiag	warning
SFInvalidInputDataAccessInChartInitDiag	warning
SFNoUnconditionalDefaultTransitionDiag	warning
SFTransitionOutsideNaturalParentDiag	warning
SFUnconditionalTransitionShadowingDiag	warning
SFUndirectedBroadcastEventsDiag	warning
SFTransitionActionBeforeConditionDiag	warning

Table 5.6. cdnlink_router Configuration Set.Components [131](5)

Property	Value
Name	Hardware Implementation
Description	
Components	
ProdBitPerChar	8
ProdBitPerShort	16
ProdBitPerInt	32
ProdBitPerLong	32
ProdBitPerLongLong	64
ProdBitPerFloat	32
ProdBitPerDouble	64
ProdBitPerPointer	32
ProdLargestAtomicInteger	Char
ProdLargestAtomicFloat	None
ProdIntDivRoundTo	Undefined
ProdEndianess	Unspecified
ProdWordSize	32
ProdShiftRightIntArith	on
ProdLongLongMode	off
ProdHWDeviceType	32-bit Generic
TargetBitPerChar	8
TargetBitPerShort	16
TargetBitPerInt	32
TargetBitPerLong	32
TargetBitPerLongLong	64
TargetBitPerFloat	32
TargetBitPerDouble	64
TargetBitPerPointer	32
TargetLargestAtomicInteger	Char
TargetLargestAtomicFloat	None
TargetShiftRightIntArith	on
TargetLongLongMode	off
TargetIntDivRoundTo	Undefined
TargetEndianess	Unspecified
TargetWordSize	32
TargetTypeEmulationWarnSuppressLevel	0
TargetPreprocMaxBitsSint	32
TargetPreprocMaxBitsUint	32

TargetHWDeviceType	Specified
TargetUnknown	off
ProdEqTarget	on

Table 5.7. cdnlink_router Configuration Set.Components [131](6)

Property	Value
Name	Model Referencing
Description	
Components	
UpdateModelReferenceTargets	IfOutOfDateOrStructuralChange
CheckModelReferenceTargetMessage	error
EnableParallelModelReferenceBuilds	off
ParallelModelReferenceErrorOnInvalidPool	on
ParallelModelReferenceMATLABWorkerInit	None
ModelReferenceNumInstancesAllowed	Multi
PropagateVarSize	Infer from blocks in model
ModelDependencies	
ModelReferencePassRootInputsByReference	on
ModelReferenceMinAlgLoopOccurrences	off
PropagateSignalLabelsOutOfModel	off
SupportModelReferenceSimTargetCustomCode	off

Table 5.8. cdnlink_router Configuration Set.Components [131](7)

Property	Value
Name	Simulation Target
Description	
Components	
SimCustomSourceCode	
SimCustomHeaderCode	
SimCustomInitializer	
SimCustomTerminator	
SimReservedNameArray	
SimUserSources	
SimUserIncludeDirs	
SimUserLibraries	
SFSimEnableDebug	on
SFSimOverflowDetection	on
SFSimEcho	on
SimBlas	on

SimCtrlC	on
SimExtrinsic	on
SimIntegrity	on
SimUseLocalCustomCode	off
SimParseCustomCode	on
SimBuildMode	sf_incremental_build
SimDataInitializer	
SimGenImportedTypeDefs	off

Table 5.9. cdnlink_router Configuration Set.Components [131](8)

Property	Value
Name	Code Generation
SystemTargetFile	grt.tlc
TLCOptions	
CodeGenDirectory	
GenCodeOnly	off
MakeCommand	make_rtw
GenerateMakefile	on
PackageGeneratedCodeAndArtifacts	off
PackageName	
TemplateMakefile	grt_default_tmf
PostCodeGenCommand	
Description	
GenerateReport	off
SaveLog	off
RTWVerbose	on
RetainRTWFile	off
ProfileTLC	off
TLCDebug	off
TLCCoverage	off
TLCAssert	off
ProcessScriptMode	Default
ConfigurationMode	Optimized
ProcessScript	
ConfigurationScript	
ConfigAtBuild	off
RTWUseLocalCustomCode	off
RTWUseSimCustomCode	off
CustomSourceCode	

CustomHeaderCode	
CustomInclude	
CustomSource	
CustomLibrary	
CustomInitializer	
CustomTerminator	
Toolchain	Automatically locate an installed toolchain
BuildConfiguration	Faster Builds
CustomToolchainOptions	
IncludeHyperlinkInReport	off
LaunchReport	off
PortableWordSizes	off
GenerateErtSFunction	off
CreateSILPILBlock	None
CodeExecutionProfiling	off
CodeExecutionProfileVariable	executionProfile
CodeProfilingSaveOptions	SummaryOnly
CodeProfilingInstrumentation	off
SILDebugging	off
TargetLang	C
IncludeRootSignalInRTWFile	off
IncludeVirtualBlocksInRTWFileBlockHierarchy-Map	off
IncludeRegionsInRTWFileBlockHierarchyMap	off
IncludeERTFirstTime	off
GenerateTraceInfo	off
GenerateTraceReport	off
GenerateTraceReportSl	off
GenerateTraceReportSf	off
GenerateTraceReportEml	off
GenerateCodeInfo	off
GenerateWebview	off
GenerateCodeMetricsReport	off
GenerateCodeReplacementReport	off
RTWCompilerOptimization	Off
ObjectivePriorities	
RTWCustomCompilerOptimizations	
CheckMdlBeforeBuild	Off
CustomRebuildMode	OnUpdate

DataInitializer	
Components	[cdnlink_router Configuration Set.Components(-8).Components(1) [141], cdnlink_router Configuration Set.Components(8).Components(2) [-142]]

Table 5.10. cdnlink_router Configuration Set.Components [131](9)

Property	Value
Description	
Components	
Name	SimEvents
SimEventsActiveTab	0
propIdentEvents	0
propIdentEventSeed	123456789
propMaxDesBlkSimulEvents	1000
propMaxDesMdlSimulEvents	100000
propDiagAttribOutput	2
propDiagFcnCallOutput	2
propDiagStatOutput	2
propDiagChangeAttrib	2
propRNGIdenticalSeeds	1
propPreventDuplicateEvents	true

Table 5.11. cdnlink_router Configuration Set.Components(8).Components [141](1)

Property	Value
Name	Code Appearance
Description	
Components	
Comment	
ForceParamTrailComments	off
GenerateComments	on
CommentStyle	Auto
IgnoreCustomStorageClasses	on
IgnoreTestpoints	off
IncHierarchyInIds	off
MaxIdLength	31
PreserveName	off
PreserveNameWithParent	off
ShowEliminatedStatement	off

OperatorAnnotations	off
IncAutoGenComments	off
SimulinkDataObjDesc	off
SFDataObjDesc	off
MATLABFcnDesc	off
IncDataTypeInIds	off
PrefixModelToSubsysFcnNames	on
MangleLength	1
CustomSymbolStr	RN$M
CustomSymbolStrGlobalVar	RN$M
CustomSymbolStrType	NR$M_T
CustomSymbolStrField	NM
CustomSymbolStrFcn	RNMF
CustomSymbolStrFcnArg	rt$I$N$M
CustomSymbolStrBlkIO	rtb_NM
CustomSymbolStrTmpVar	NM
CustomSymbolStrMacro	RN$M
CustomSymbolStrUtil	NC
CustomCommentsFcn	
DefineNamingRule	None
DefineNamingFcn	
ParamNamingRule	None
ParamNamingFcn	
SignalNamingRule	None
SignalNamingFcn	
InsertBlockDesc	off
InsertPolySpaceComments	off
SimulinkBlockComments	on
MATLABSourceComments	off
EnableCustomComments	off
InternalIdentifier	Shortened
InlinedPrmAccess	Literals
ReqsInCode	off
UseSimReservedNames	off
ReservedNameArray	

Table 5.12. cdnlink_router Configuration Set.Components(8).Components [141](2)

Property	Value

Name	Target
Description	
Components	
IsERTTarget	off
TargetFcnLib	ansi_tfl_table_tmw.mat
TargetLibSuffix	
TargetPreCompLibLocation	
GenFloatMathFcnCalls	NOT IN USE
TargetLangStandard	C89/C90 (ANSI)
TargetFunctionLibrary	NOT IN USE
CodeReplacementLibrary	None
UtilityFuncGeneration	Auto
ERTMultiwordTypeDef	System defined
ERTMultiwordLength	256
MultiwordLength	2048
GenerateFullHeader	on
GenerateSampleERTMain	off
GenerateTestInterfaces	off
ModelReferenceCompliant	on
ParMdlRefBuildCompliant	on
CompOptLevelCompliant	on
ConcurrentExecutionCompliant	on
IncludeMdlTerminateFcn	on
GeneratePreprocessorConditionals	Disable all
CombineOutputUpdateFcns	on
CombineSignalStateStructs	off
SuppressErrorStatus	off
ERTFirstTimeCompliant	off
IncludeFileDelimiter	Auto
ERTCustomFileBanners	off
SupportAbsoluteTime	on
LogVarNameModifier	rt_
MatFileLogging	on
MultiInstanceERTCode	off
CodeInterfacePackaging	Nonreusable function
SupportNonFinite	on
SupportComplex	on
PurelyIntegerCode	off
SupportContinuousTime	on

SupportNonInlinedSFcns	on
SupportVariableSizeSignals	off
ParenthesesLevel	Nominal
GenerateClassInterface	off
ModelStepFunctionPrototypeControlCompliant	off
CPPClassGenCompliant	on
AutosarCompliant	off
GRTInterface	off
GenerateAllocFcn	off
UseToolchainInfoCompliant	on
ExtMode	off
ExtModeStaticAlloc	off
ExtModeTesting	off
ExtModeStaticAllocSize	1000000
ExtModeTransport	0
ExtModeMexFile	ext_comm
ExtModeMexArgs	
ExtModeIntrfLevel	Level1
RTWCAPISignals	off
RTWCAPIParams	off
RTWCAPIStates	off
RTWCAPIRootIO	off
GenerateASAP2	off
MultiInstanceErrorCode	Error

Chapter 6. Glossary

Atomic Subsystem. A subsystem treated as a unit by an implementation of the design documented in this report. The implementation computes the outputs of all the blocks in the atomic subsystem before computing the next block in the parent system's block execution order (sorted list).

Block Diagram. A Simulink block diagram represents a set of simultaneous equations that relate a system or subsystem's inputs to its outputs as a function of time. Each block in the diagram represents an equation of the form y = f(t, x, u) where t is the current time, u is a block input, y is a block output, and x is a system state (see the Simulink documentation for information on the functions represented by the various types of blocks that make up the diagram). Lines connecting the blocks represent dependencies among the blocks, i.e., inputs whose current values are the outputs of other blocks. An implementation of a design described in this document computes a root or atomic system's outputs at each time step by computing the outputs of the blocks in an order determined by block input/output dependencies.

Block Parameter. A variable that determines the output of a block along with its inputs, for example, the gain parameter of a Gain block.

Block Execution Order. The order in which Simulink evaluates blocks during simulation of a model. The block execution order determined by Simulink ensures that a block executes only after all blocks on whose outputs it depends are executed.

Checksum. A number that indicates whether different versions of a model or atomic subsystem differ functionally or only cosmetically. Different checksums for different versions of the same model or subsystem indicate that the versions differ functionally.

Design Variable. A symbolic (MATLAB) variable or expression used as the value of a block parameter. Design variables allow the behavior of the model to be altered by altering the value of the design variable.

Signal. A block output, so-called because block outputs typically vary with time.

Virtual Subsystem. A subsystem that is purely graphical, i.e., is intended to reduce the visual complexity of the block diagram of which it is a subsystem. An implementation of the design treats the blocks in the subsystem as part of the first nonvirtual ancestor of the virtual subsystem (see Atomic Subsystem).

Chapter 7. About this Report

Table of Contents

7.1. Report Overview

This report describes the design of the cdnlink_router system. The report was generated automatically from a Simulink model used to validate the design. It contains the following sections:

Model Version. Specifies information about the version of the model from which this design description was generated. Includes the model checksum, a number that indicates whether different versions of the model differ functionally or only cosmetically. Different checksums for different versions indicate that the versions differ functionally.

Root System. Describes the design's root system.

Subsystems. Describes each of the design's subsystems.

Design Variables. Describes system design variables, i.e., MATLAB variables and expressions used as block parameter values.

System Model Configuration. Lists the configuration parameters, e.g., start and stop time, of the model used to simulate the system described by this report.

Requirements Traceability. Shows design requirements associated with elements of the design model. This section appears only if the design model contains requirements links.

Glossary. Defines Simulink terms used in this report.

7.2. Root System Description

This section describes a design's root system. It contains the following sections:

Diagram. Simulink block diagram that represents the algorithm used to compute the root system's outputs.

Description. Description of the root system. This section appears only if the model's root system has a Documentation property or a Doc block.

Interface. Name, data type, width, and other properties of the root system's input and output signals. The number of the block port that outputs the signal appears in angle brackets appended to the signal name. This section appears only if the root system has input or output ports.

Blocks. This section has two subsections:

- **Parameters.** Describes key parameters of blocks in the root system. This section also includes graphical and/or tabular representations of lookup table data used by lookup table blocks, i.e., blocks that use lookup tables to compute their outputs.

- **Block Execution Order.** Order in which blocks must be executed at each time step in order to ensure that each block's inputs are available when it executes.

State Charts. Describes state charts used in the root system. This section appears only if the root system contains Stateflow blocks.

7.3. Subsystem Descriptions

This section describes a design's subsystems. Each subsystem description contains the following sections:

Checksum. This section appears only if the subsystem is an atomic subsystem. The checksum indicates whether the version of the model subsystem used to generate this report differs functionally from other versions of the model subsystem. If two model checksums differ, the corresponding versions of the model differ functionally.

Diagram. Simulink block diagram that graphically represents the algorithm used to compute the subsystem's outputs.

Description. Description of the subsystem. This section appears only if the subsystem has a Documentation property or contains a Doc block.

Interface. Name, data type, width, and other properties of the subsystem's input and output signals. The number of the block port that outputs the signal appears in angle brackets appended to the signal name. This section appears only if the subsystem is atomic and has input or output ports.

Blocks. Blocks that this subsystem contains. This section has two subsections:

- **Parameters.** Key parameters of blocks in the subsystem. This section also includes graphical and/or tabular representations of lookup table data used by lookup table blocks, blocks that use lookup tables to compute their outputs.
- **Block Execution Order.** Order in which the subsystem's blocks must be executed at each time step in order to ensure that each block's inputs are available when the block executes .This section appears only if the subsystem is atomic.

State Charts. Describes state charts used in the subsystem. This section appears only if the root system contains Stateflow blocks.

7.4. State Chart Descriptions

This section describes the state machines used by Stateflow blocks to compute their outputs, i.e., Stateflow blocks. Each state machine description contains the following sections:

Chart. Diagram representing the state machine.

States. Describes the state machine's states. Each state description includes the state's diagram and diagrams and/or descriptions of graphical functions, Simulink functions, truth tables, and MATLAB functions parented by the state.

Transitions. Transitions between the state machine's states. Each transition description specifies the values of key transition properties. Appears only if a transition has properties that do not appear on the chart.

Junctions. Transition junctions. Each junction description specifies the values of key junction properties. Appears only if a junction has properties that do not appear on the chart.

Events. Events that trigger state transitions. Each event description specifies the values of key event properties.

Data. Data types and other properties of the Stateflow block's inputs, outputs, and other state machine data.

Targets. Executable implementations of the state machine used to compute the outputs of the corresponding Stateflow block.

MATLAB Supporting Functions. List of functions invoked by MATLAB functions defined in the chart.