Logical Shift Right Algorithm

Original Data

B_{15}	B_{14}	B_{13}	B_{12}	B_{11}	B_{10}	B_9	B_8	B_7	B_6	B_5	B_4	B_3	B_2	B_1	B_0

Shifted Data →

0	B_{15}	B_{14}	B_{13}	B_{12}	B_{11}	B_{10}	B_9	B_8	B_7	B_6	B_5	B_4	B_3	B_2	B_1

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Algorithm

Test Mask

0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Original Data

B_{15}	B_{14}	B_{13}	B_{12}	B_{11}	B_{10}	B_9	B_8	B_7	B_6	B_5	B_4	B_3	B_2	B_1	B_0

Shifted Data

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Set Mask

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

The Original Data is given in R0.
The algorithm builds the Shifted Data in R1 (or any other register)
The Test Mask is used to test a single bit of the Original Data, one at a time
The Set Mask is used to set a single bit of the Shifted Data, one at a time

Initialization:
Clear the Shifted Data register and initialize the two masks as shown.
Notice the 1-bit in the Test Mask is at the next higher index than the 1-bit in the Set Mask.

Repeat the following the required number of times:
Test a bit of the Original Data using the Test Mask.
If the tested bit is 1, set the next lower bit of the Shifted Data using the Set Mask.
Perform a left-shift on both the Test Mask and Set Mask.