Based on this timing report, here is an analysis of both **maximum and minimum path delays** for each path. This analysis helps determine the timing constraints and frequency limits for each clock domain in your asynchronous FIFO design.

**Key Observations and Analysis:**

1. **Path 1: Asynchronous Path (wrst\_n to wrpthandler/*41*)**
   * **Clock**: CLK1
   * **Type**: Asynchronous (recovery check against CLK1 rising edge)
   * **Data Arrival Time**: 5.00 ns
   * **Data Required Time**: 1000.05 ns
   * **Slack**: 995.05 ns (MET)
   * **Max Path Delay**: 5.00 ns

This path shows a large positive slack of 995.05 ns, meaning there is no timing violation here. The Max Path Delay for this path is 5.00 ns.

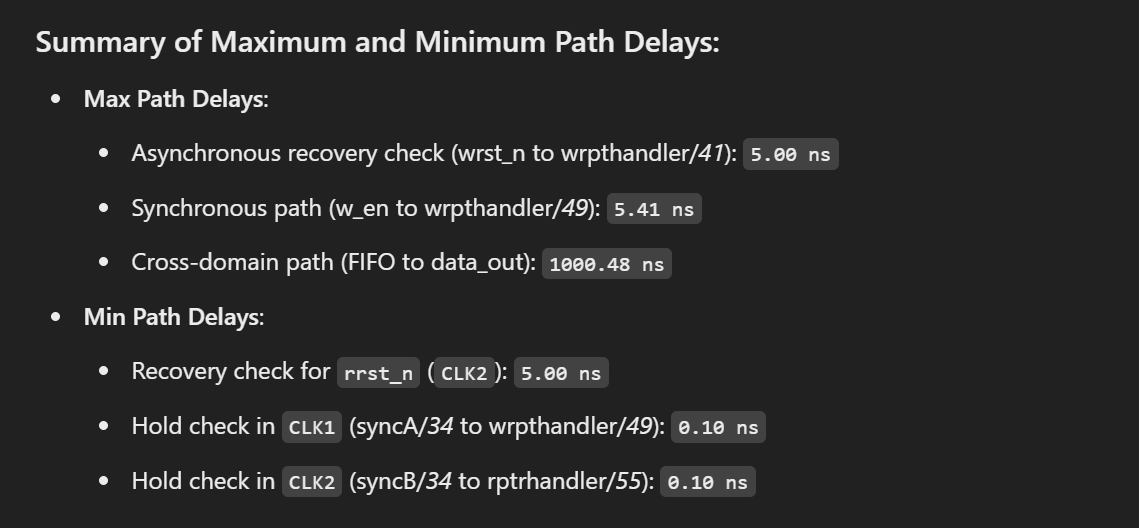
1. **Path 2: Synchronous Path (w\_en to wrpthandler/*49*)**
   * **Clock**: CLK1
   * **Type**: Synchronous
   * **Data Arrival Time**: 5.41 ns
   * **Data Required Time**: 999.96 ns
   * **Slack**: 994.55 ns (MET)
   * **Max Path Delay**: 5.41 ns

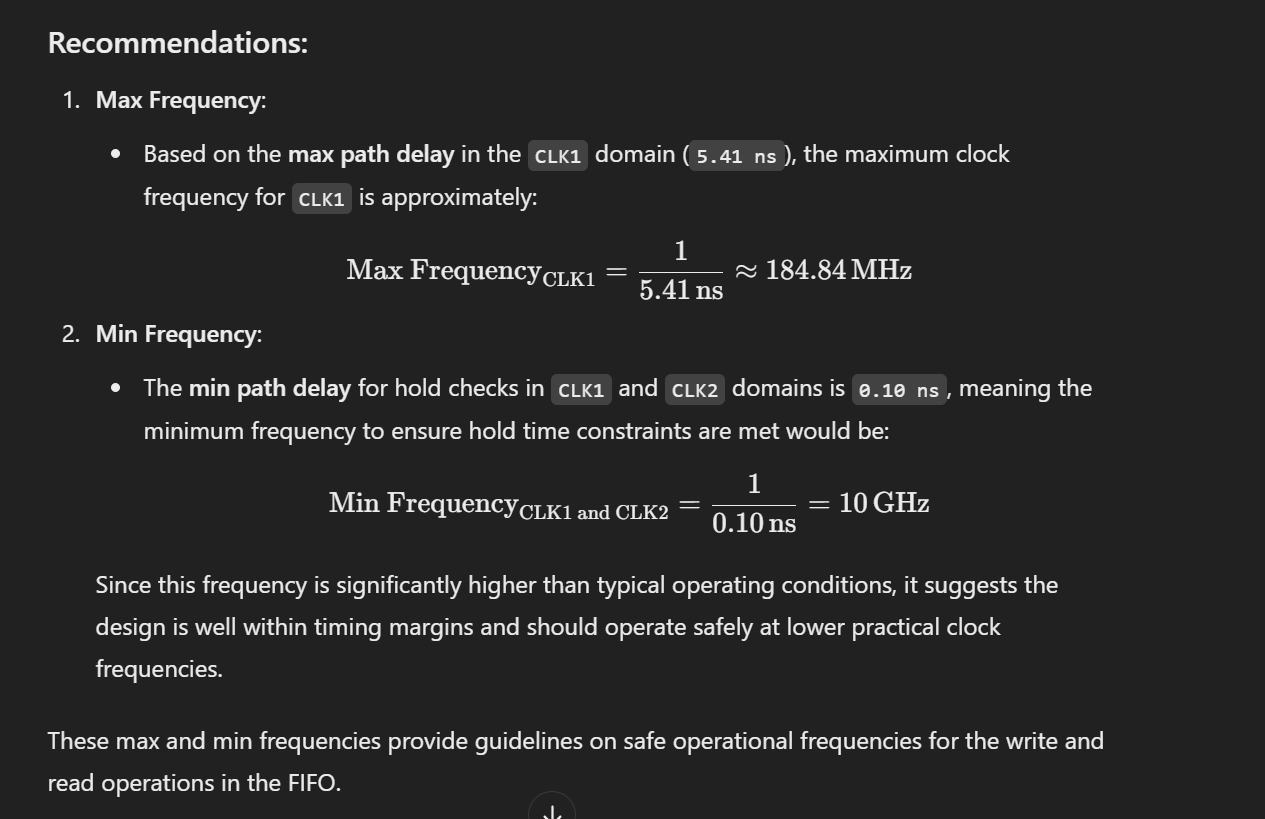
The slack here is also positive, indicating no timing issues. The Max Path Delay for this path is 5.41 ns.

1. **Path 3: Cross-Domain Path (FIFO to data\_out)**
   * **Clock**: CLK1 to CLK2
   * **Type**: Asynchronous (crossing from CLK1 to CLK2)
   * **Data Arrival Time**: 1000.48 ns
   * **Data Required Time**: 1995.00 ns
   * **Slack**: 994.52 ns (MET)
   * **Max Path Delay**: 1000.48 ns

This path crosses clock domains, showing a significant delay of 1000.48 ns. However, with a slack of 994.52 ns, there is still enough margin. The Max Path Delay for this cross-domain path is 1000.48 ns.

1. **Minimum Path Delay (Path Type: Min Path - Recovery and Hold Checks)**
   * **Recovery Check (rrst\_n to rptrhandler/*45*)**
     + **Clock**: CLK2
     + **Data Arrival Time**: 5.00 ns
     + **Data Required Time**: 0.18 ns
     + **Slack**: 4.82 ns (MET)
     + **Min Path Delay**: 5.00 ns
   * **Hold Check (syncA/*34* to wrpthandler/*49*)**
     + **Clock**: CLK1
     + **Data Arrival Time**: 0.10 ns
     + **Data Required Time**: 0.00 ns
     + **Slack**: 0.10 ns (MET)
     + **Min Path Delay**: 0.10 ns
   * **Hold Check (syncB/*34* to rptrhandler/*55*)**
     + **Clock**: CLK2
     + **Data Arrival Time**: 0.10 ns
     + **Data Required Time**: 0.00 ns
     + **Slack**: 0.10 ns (MET)
     + **Min Path Delay**: 0.10 ns

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