



IEEE 802.6 (DQDB)

Last Updated : 24 Jan, 2020

IEEE 802.6 standard i.e. DQDB(Distributed Queue Dual Bus) is a [MAN\(Metropolitan Area Network\)](#) protocol. It can be defined as a high speed shared medium access control protocol that is used over a bus network. It has two unidirectional buses, for controlling purposes, where the bus can carry data, video, and voice over a network with bandwidth being allocated as per time slots. The advantage of using the paired bus is that it is used to tackle failure configuration. It can be extended up to 30 miles at 34-55 Mbps.

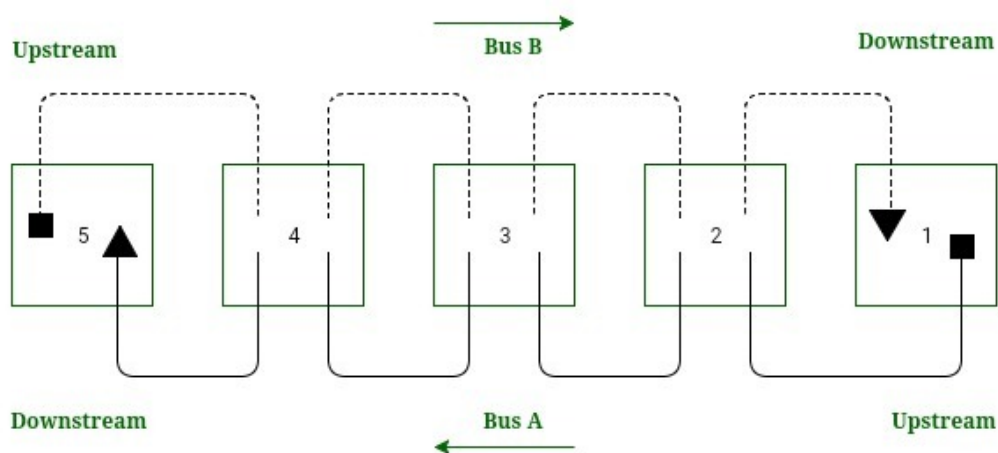


Fig.1:- Working of DQDB

the bus being represented as a *triangle* (Fig.1). Bus A traffic moves from right to left (i.e. from station 1 to 5) whereas the bus B traffic moves from left to right (i.e. from station 5 to 1).

Upstream and Downstream:

The relationship of stations of the DQDB network depends on the directional flow of traffic of the buses.

Considering bus A in Fig.1, which has station 1 & 2 marked as upstream w.r.t station 3 and station 4 & 5 are downstream w.r.t station 3. Here in bus A, station 1 is head of the bus as there is no upstream station and station 5 has no downstream station and it is regarded as to end of bus A.

Working:

The head of the bus A i.e. station 1 generates empty slot for use of bus A. Similarly, the head of bus B i.e. station 5 generate empty slot for use of bus B. The empty slot travels down its bus until the transmission station drops data into it and intended destination reads the data.

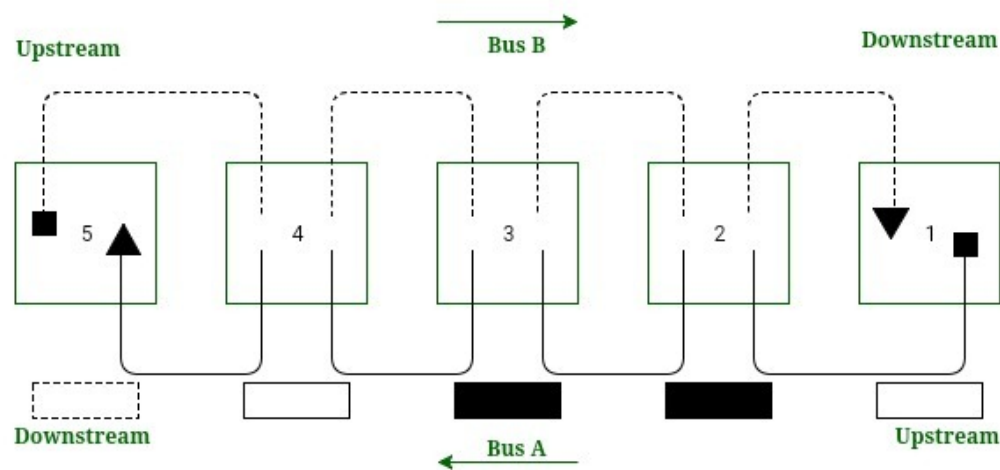


Fig.2:- DQDB Slot traveling

For example:

slot into the passing slot. Station 3 reads the address and passes the slot as unread. Station 4 recognizes its address, reads the data and changes the status of the slot and passes it along with station 5 where it is absorbed.

How slot reservation is done?

To send data downstream, a station must wait for the arrival of the unoccupied slot, but here the question arises that how to stop an upstream station from manipulating the bus due to which the station near the end of the bus suffers, as the imbalance can lead to degraded quality of service. The solution to this problem is to do a reservation at the station. Here station 2 can make a reservation for bus A on bus B. Station 2 sets a reservation bit on a slot on bus B to tell each station it passes through, that the station is reserving a slot on bus A. All the station must respect the reservation of downstream station and leave the slot for requested station.

Get ready to boost your rank and secure an exceptional GATE 2025 score with confidence!

Our [GATE CS & IT Test Series 2025](#) offers **60 PYQs Quizzes, 60 Subject-Wise Mock Tests, 4500+ PYQs and practice questions**, and over **20 Full-Length Mock Tests** that ensure you're well-prepared to tackle the toughest questions and secure a top-rank in the GATE 2025 exam. Get personalized insights with student rankings based on performance and benefit from expert-designed tests created by industry pros and GATE CS toppers.

Plus, don't miss out on these exclusive features:

--> **All India Mock Test**

--> **Live GATE CSE Mentorship Classes**

--> **Live Doubt Solving Sessions**

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).