

97-0833: Test Experiences and Modifications to Mean Frame Burst Size (MFBS) Section of Performance Testing Baseline Text.

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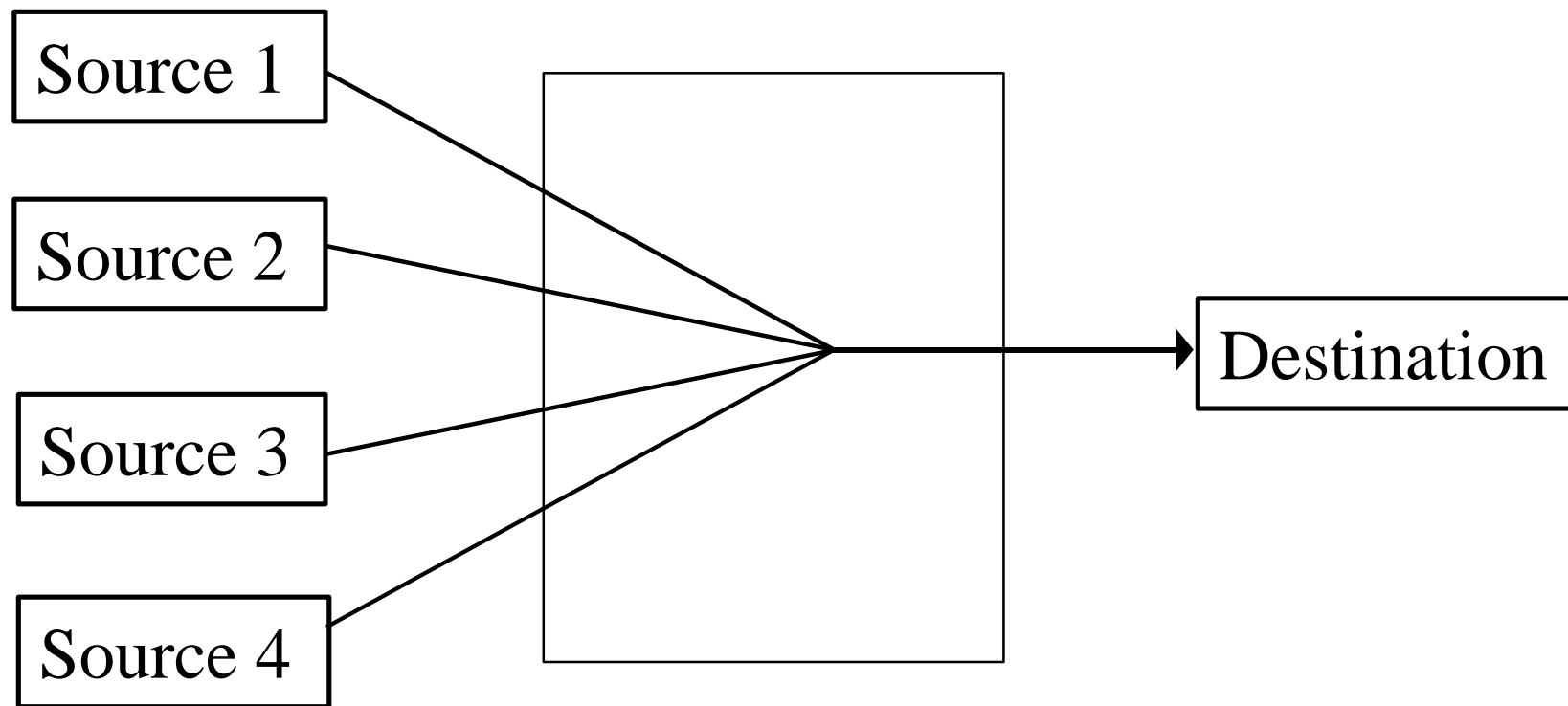


- ❑ MFBS Review
- ❑ MFBS Measurement Procedure and Calculation
- ❑ Measurement Results and Analysis
- ❑ Summary

MFBS Review

- ❑ MFBS is the maximum number of frames that each of the source can send at peak rate through switch without incurring any loss.
- ❑ MFBS measures the data buffering capacity of the switch and its ability to handle back-to-back frames.
- ❑ The baseline states that MFBS should be measured using k-to-1 configuration.
- ❑ The experimental results indicate that the MFBS for various values of k can be obtained from the measured MFBS for one k.

MFBS Measurement Procedure and Calculation



MFBS Test Configuration

MFBS Measurement Procedure and Calculation (contd.)

- ❑ First, measure MCBS, which is the largest number of back-to-back cells that the sources may send simultaneously without losses.
- ❑ In order to measure MCBS:
 - ❑ Simultaneously generate fixed length bursts of back-to-back cells through all k VCCs.
 - ❑ Vary the burst length until cell loss is verified at least in one VCC.
- ❑ Then based on MCBS results, calculate MFBS of frames with a given size.

Measurement Results for MCBS

Traffic Configuration	MCBS (per source)
2-to-1	9,050 cells
3-to-1	4,650 cells
4-to-1	3,050 cells

MFBS [in Bytes] Calculated from Measured MCBS

Config-uration	64B Frames	1518B Frames	9188B Frames	64kB Frames
2-to-1	434,368	434,148	431,836	393,216
3-to-1	223,168	223,146	220,512	196,608
4-to-1	146,368	145,728	137,820	131,072

Analysis of Measurement Results

Configuration	The Switch in each interval	
	transmits:	buffers:
2-to-1	1	1
3-to-1	1	2
4-to-1	1	3
i-to-1	1	i-1

- Given (measured) MCBS for k, MCBS for j can be calculated as:

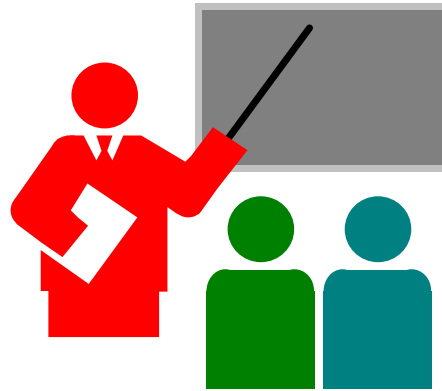
$$\text{MCBS}_j = \text{MCBS}_k * (k-1)/(j-1)$$

Use $k = 2$ to minimize the equipment needed.

Traffic Characteristics

- ❑ Type of VCCs: permanent virtual path connections, switched virtual path connections, permanent virtual channel connections, switch virtual channel connections;
- ❑ VCCs established: between ports inside a network module, between ports on different network modules, between ports on different fabrics, some combination of previous cases;
- ❑ Connection configuration: 2-to-1;
- ❑ Frame length: 64 B, 1518 B, 9188 B, 64 kB;

Summary



- ❑ A procedure to obtain the MFBS is defined.
- ❑ 2-to-1 configuration is sufficient
- ❑ Detailed traffic characteristics are defined.

Motion

- Adopt the text of 97-0833 to replace section 3.5 of Performance Testing Baseline Text.