



# **z/OS Systems Working Group**

**June 6, 2007**

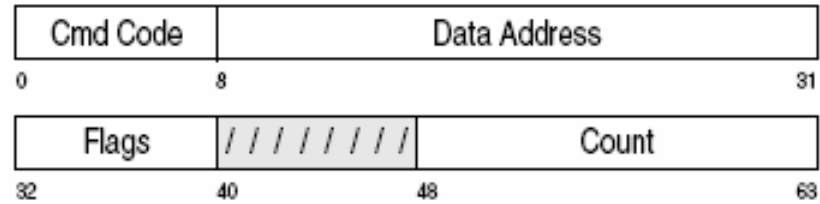
## **The MIDAW Facility**

**Jacques Glorieux  
IBM Belgium**

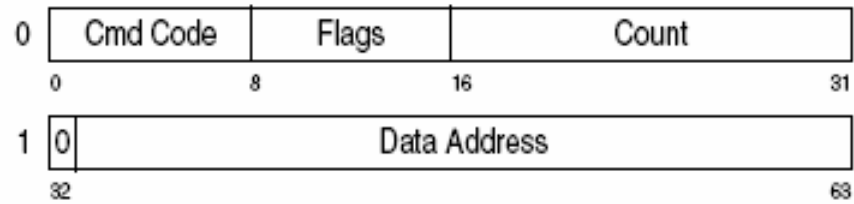
**[jacques\\_glorieux@be.ibm.com](mailto:jacques_glorieux@be.ibm.com)**

# CCWs

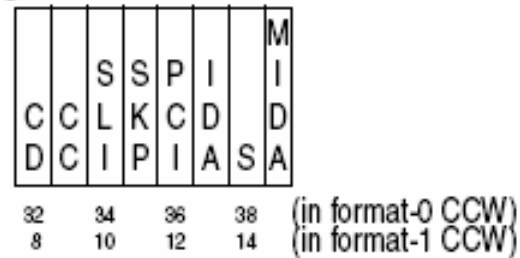
## Format-0 CCW



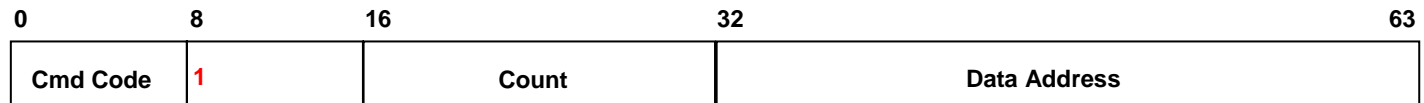
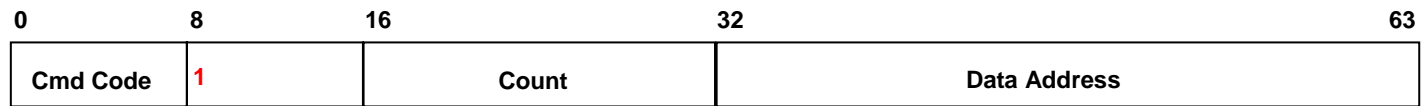
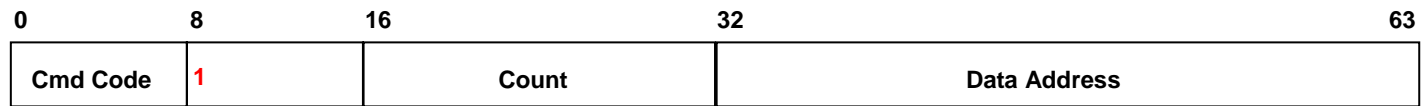
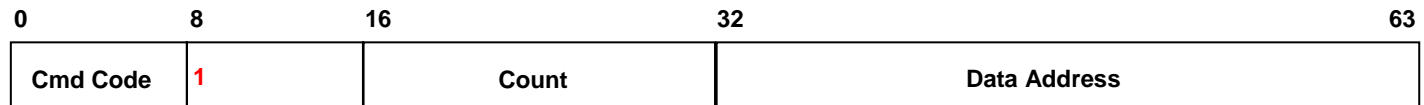
## Format-1 CCW



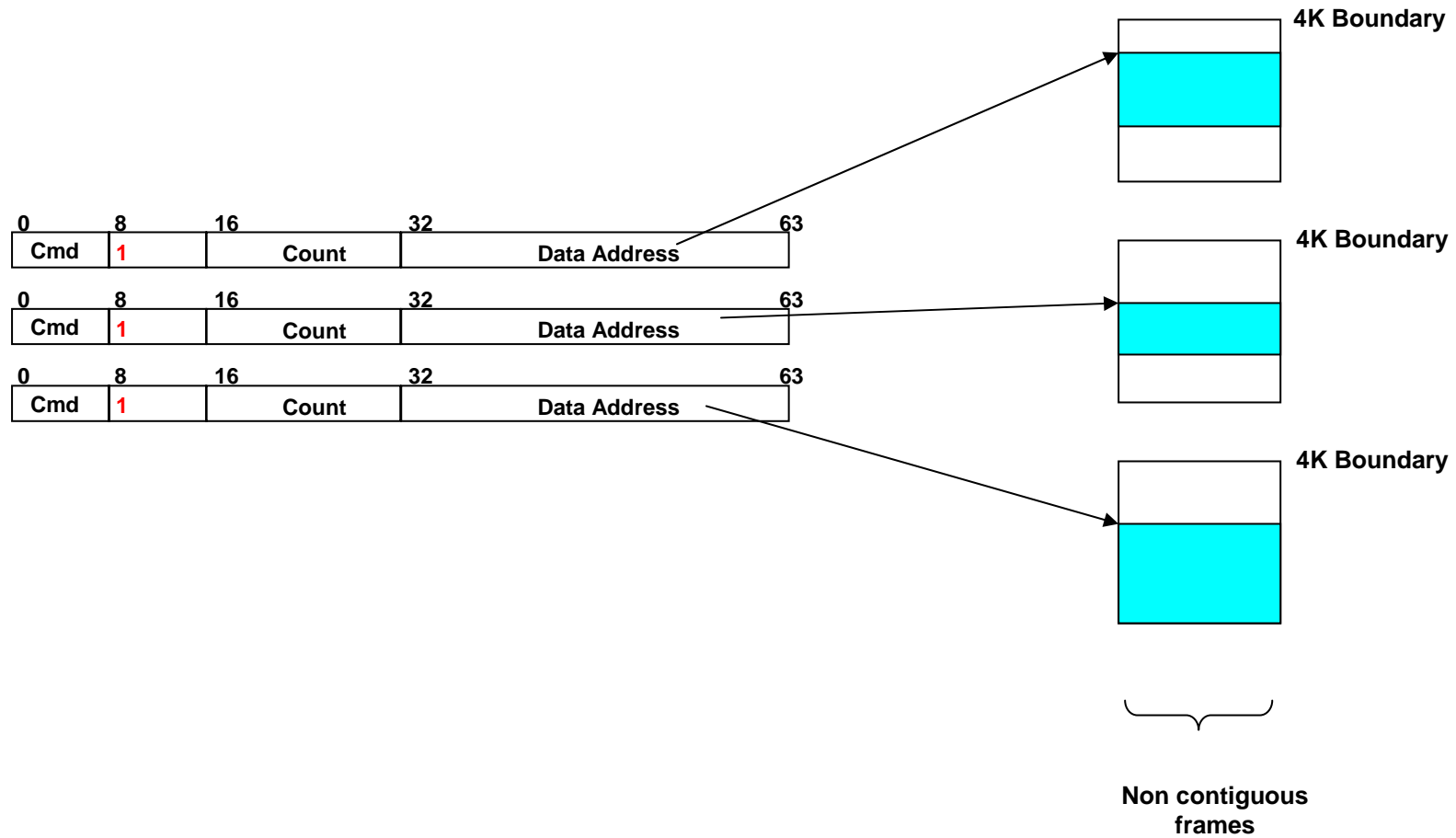
## Flags



# Data Chaining

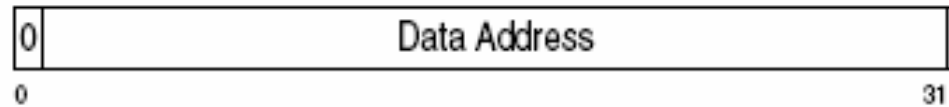


# Data Chaining & Scattered Reads/Writes

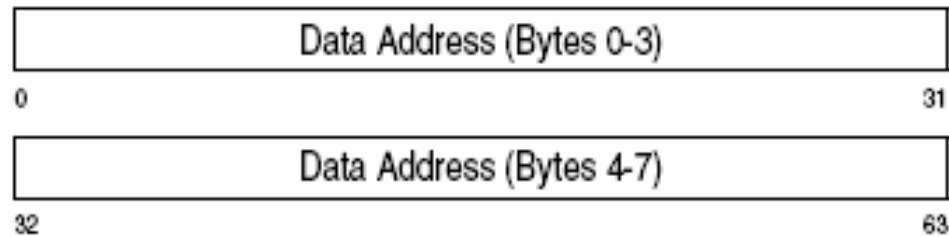


# CCW Indirect Data Addressing IDAWs

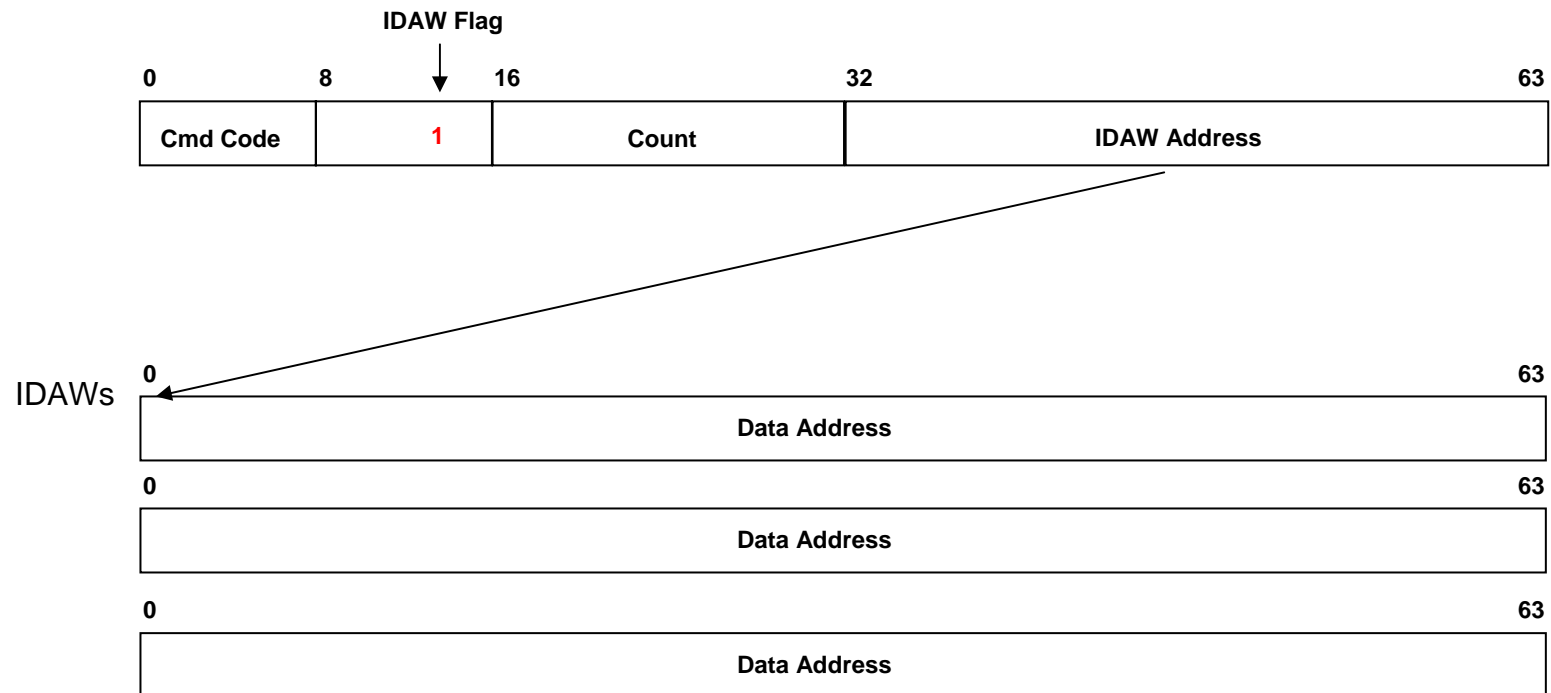
## Format-1 IDAW



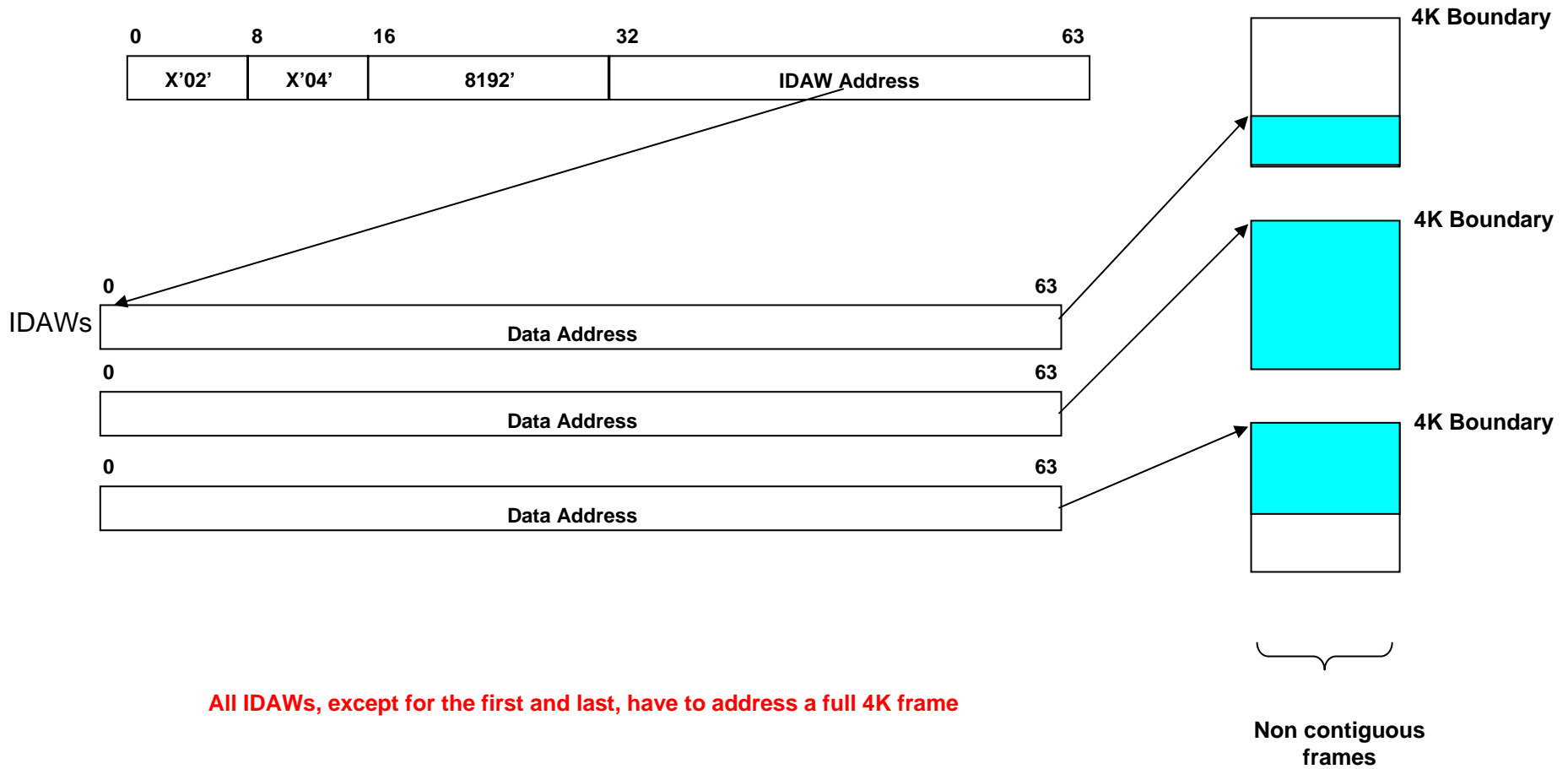
## Format-2 IDAW



# CCW Indirect Data Addressing IDAWs



# CCW Indirect Data Addressing ... IDAWs

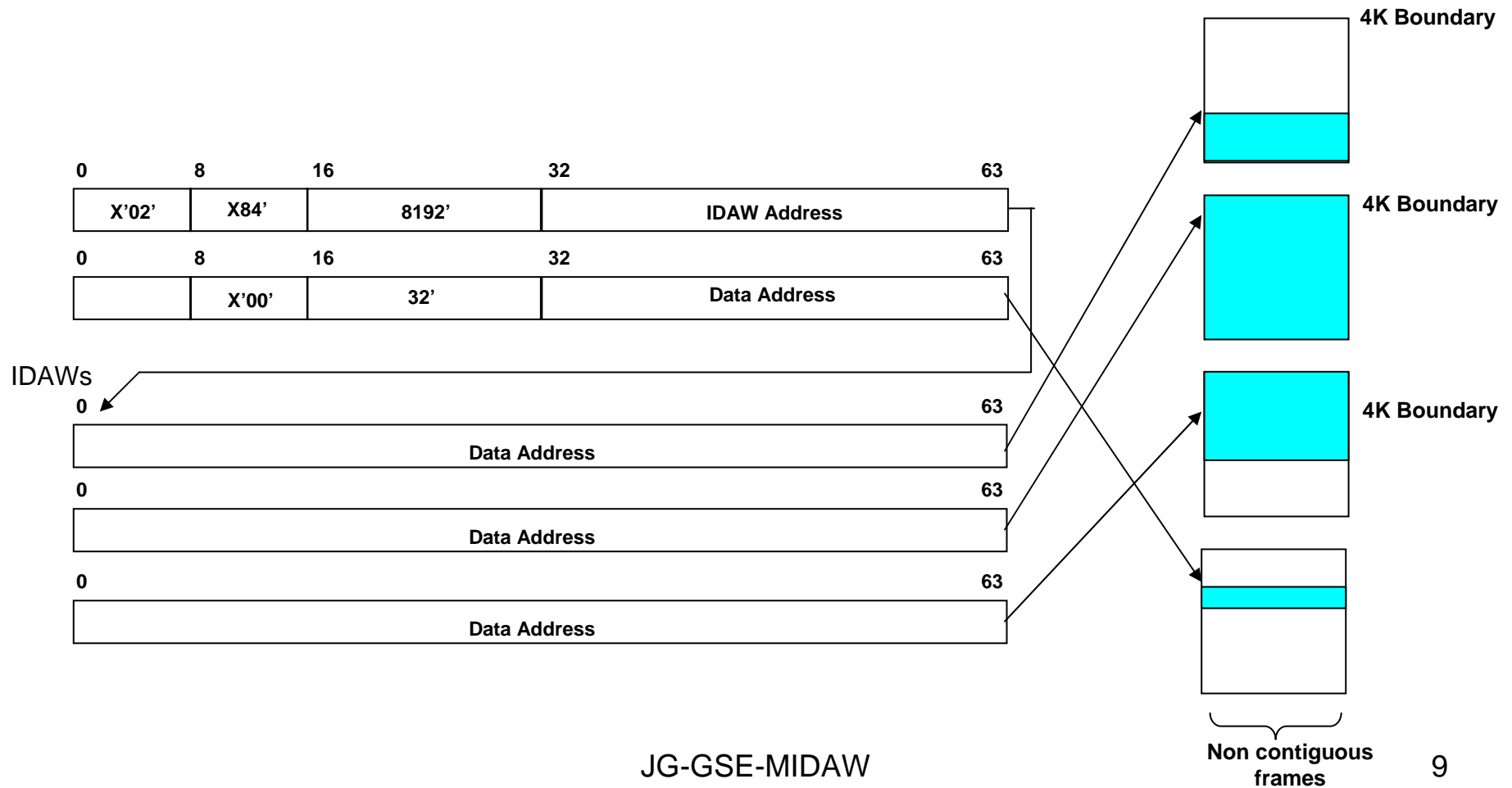


## Extended Format Data Sets

- more complex data structures
- 32-byte suffix appended at the end of each block (non VSAM) or at the end of each CI (VSAM)
- the suffix is transparent to the access method or database
- improve data reliability
- allows for :
  - Striping
  - Compression
  - Extended addressability
- implies scatter reads/writes

# IDAWs and Scattered Reads/Writes

8K block of a EF dataset



# Reading 32 4K-blocks

Non-EF datasets

- CCW READ 4K
- CCW READ 4K
- CCW READ 4K
- CCW READ 4K
- CCW READ 4K
- CCW READ 4K
- CCW READ 4K
- CCW READ 4K
- CCW READ 4K

...32 CCW's in total

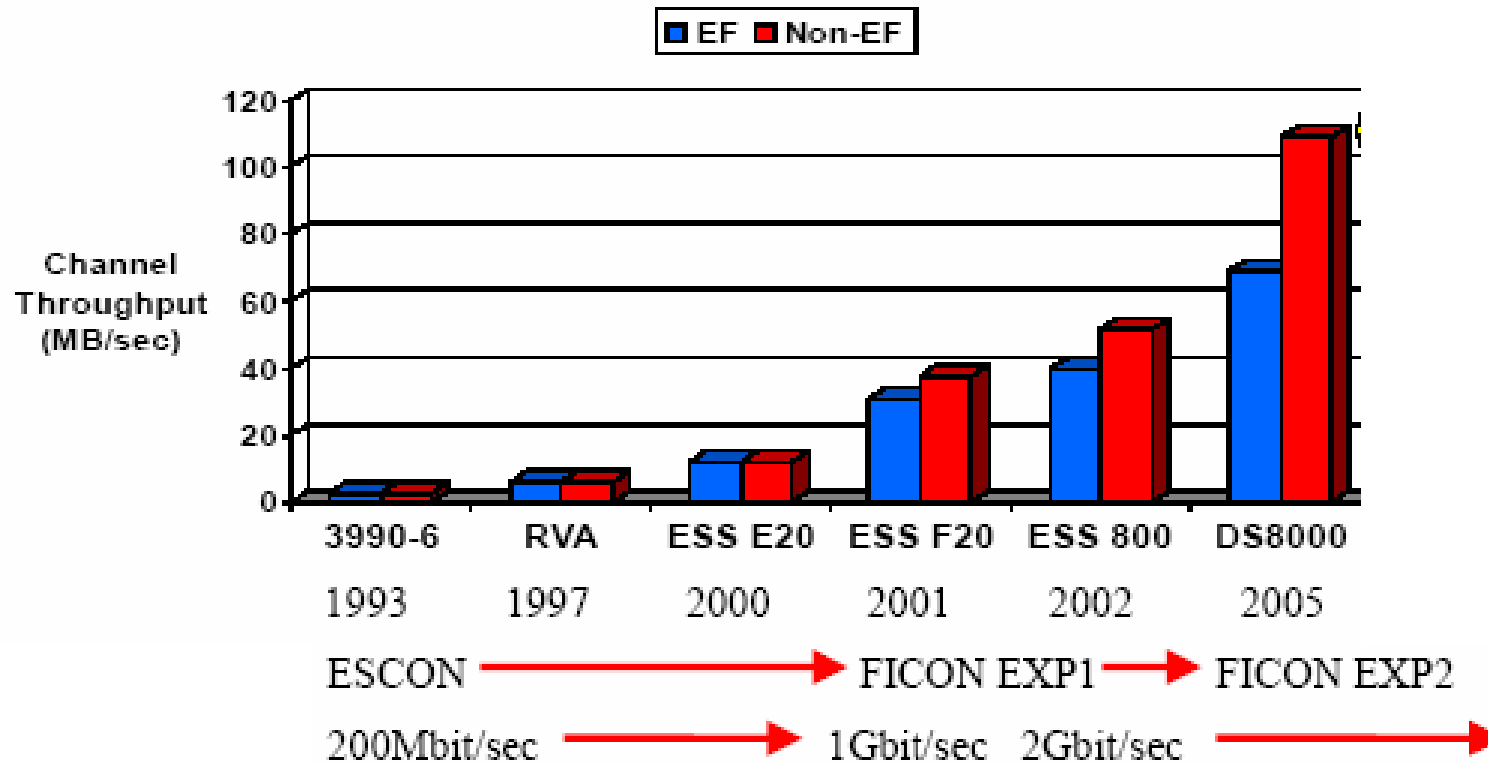
EF datasets

- CCW READ 4K
- CCW READ 32 byte suffix
- CCW READ 4K
- CCW READ 32 byte suffix
- CCW READ 4K
- CCW READ 32 byte suffix
- CCW READ 4K
- CCW READ 32 byte suffix
- CCW READ 4K
- CCW READ 32 byte suffix

...64 CCW's in total

# Growing gap in MB/sec between EF & non-EF

.DB2 Sequential Pre-fetch (4K pages)

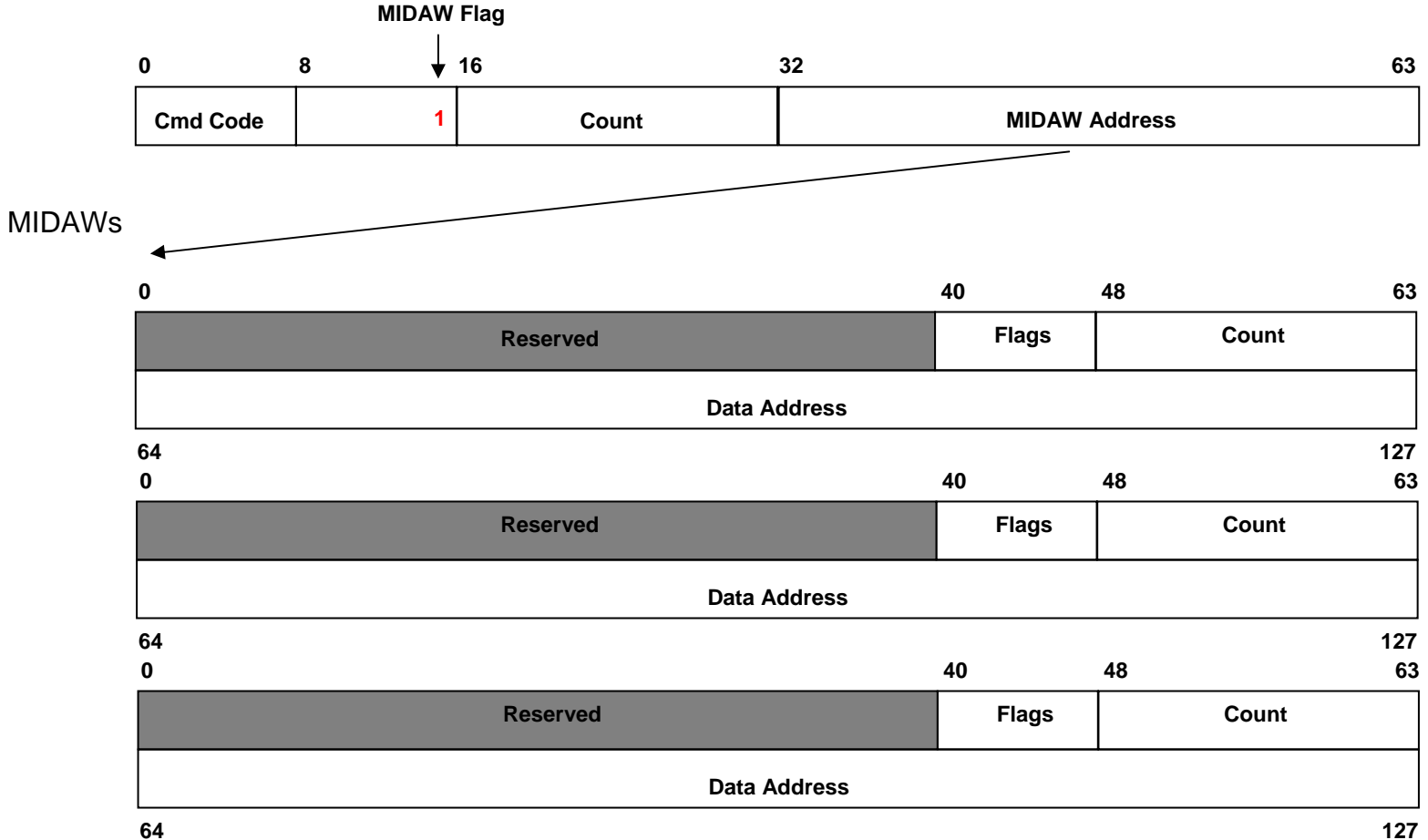


# CCW Indirect Data Addressing MIDAWs

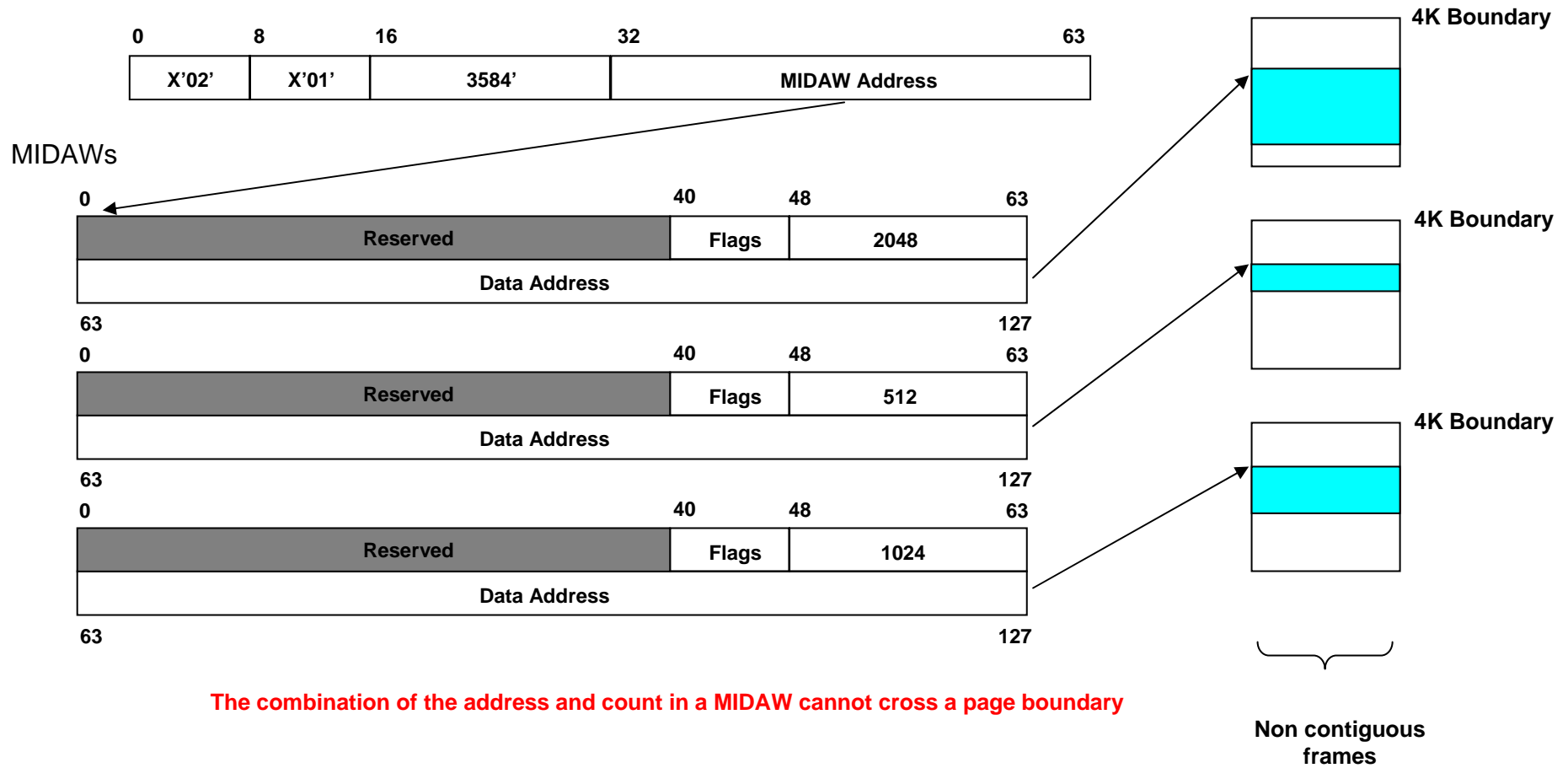
Doubleword



# CCW Indirect Data Addressing MIDAWs

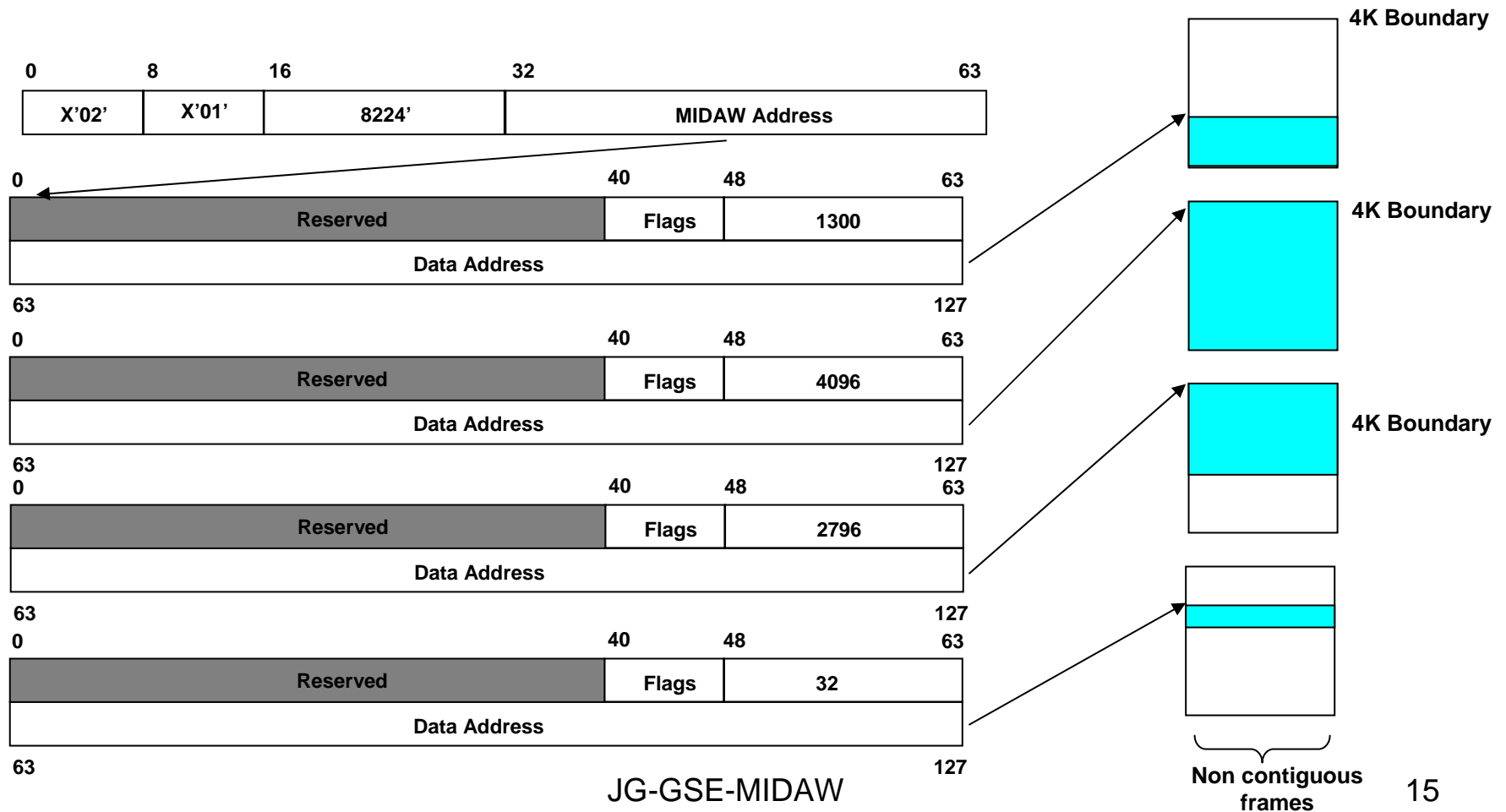


# CCW Indirect Data Addressing ... MIDAWs



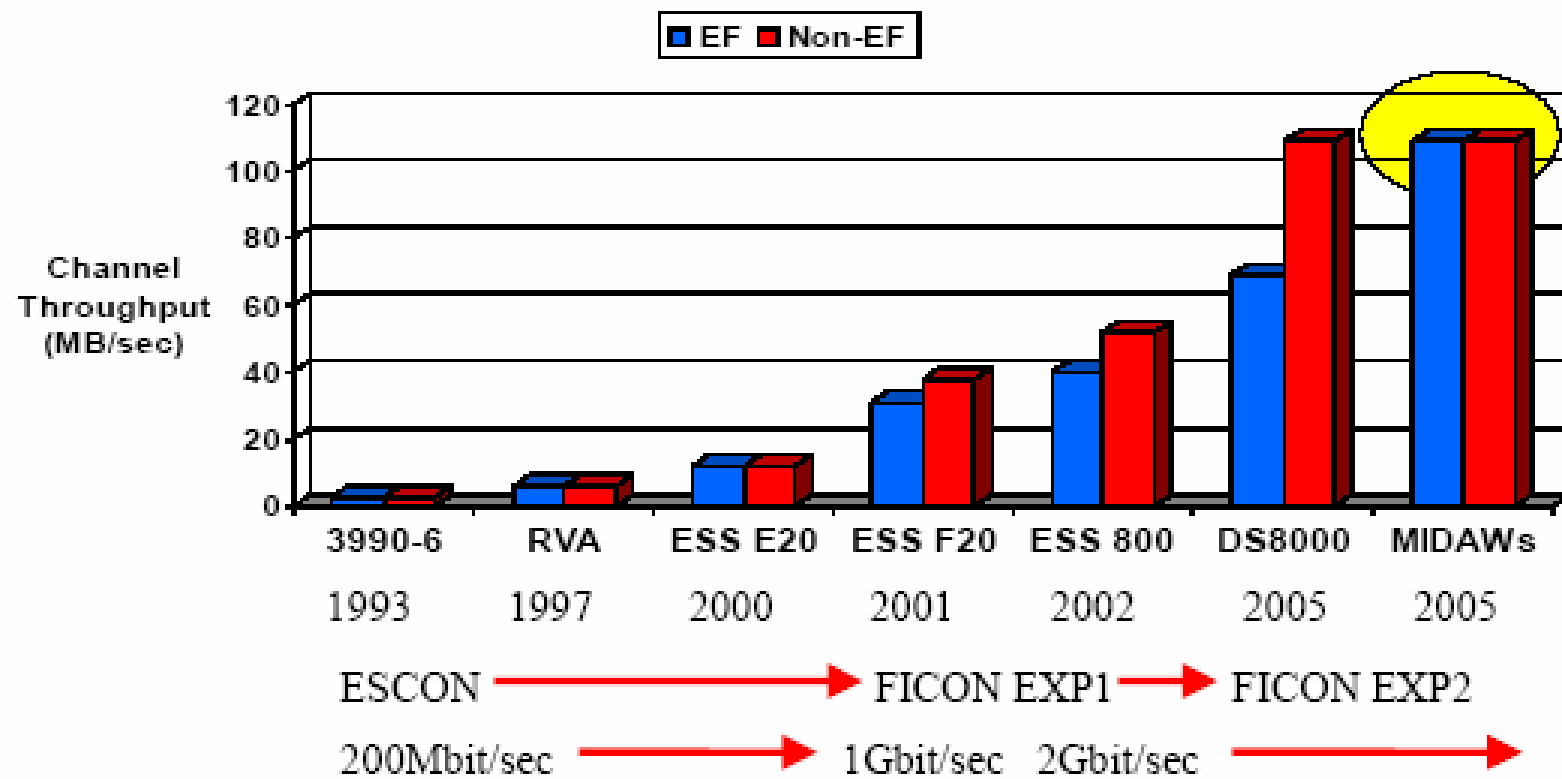
# MIDAWs and Scattered Reads/Writes

8K block of a EF dataset



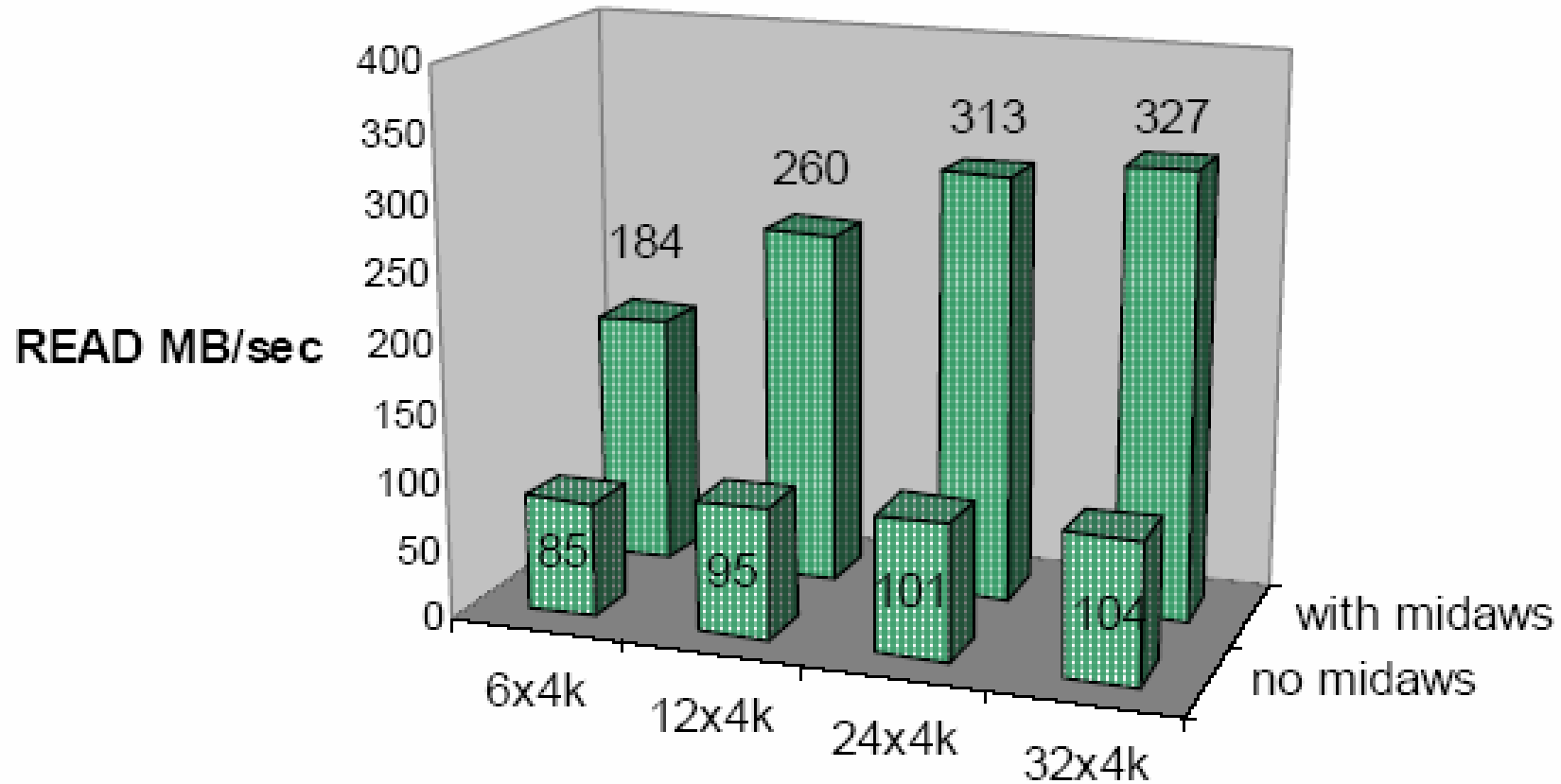
# Shrinking the gap in MB/sec between EF & non-EF

## DB2 Sequential Pre-fetch (4K pages)

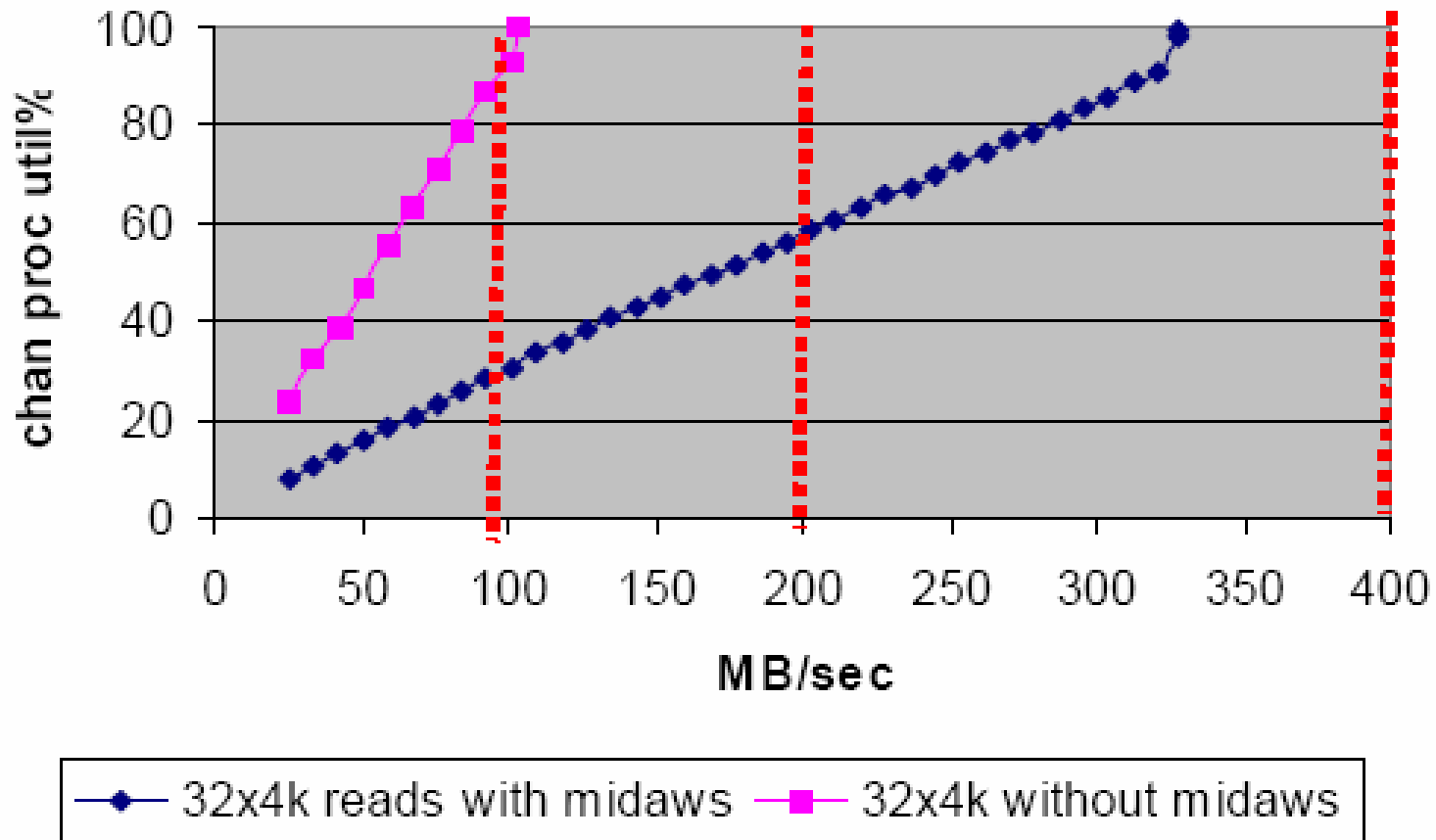


JG-GSE-MIDAW

## FICON Express4 Channel Measurements



## 32x4K READs with & without MIDAWs



# MIDAW Requirements

- z9 Processor
- MIDAW=YES in IECIOSxx
- Channel Program created by the Media Manager

**End of Presentation**