

File created: 14-Jun-88 14:57:44 {QV}<PEDERSEN>LISP>ARRAY-TESTER.;1

changes to: (VERIFIED-TESTS ARRAY-READ-BIT ARRAY-READ-BYTE ARRAY-READ-WORD ARRAY-READ-SIGNED-WORD
ARRAY-READ-FIXP ARRAY-READ-FLOATP ARRAY-READ-THIN-CHAR ARRAY-READ-FAT-CHAR
ARRAY-READ-POINTER ARRAY-READ-XPOINTER ARRAY-WRITE-BIT ARRAY-WRITE-BYTE ARRAY-WRITE-WORD
ARRAY-WRITE-SIGNED-WORD ARRAY-WRITE-FIXP ARRAY-WRITE-FLOATP ARRAY-WRITE-THIN-CHAR
ARRAY-WRITE-FAT-CHAR ARRAY-WRITE-POINTER ARRAY-WRITE-XPOINTER)
(IL:VARS IL:ARRAY-TESTERCOMS)
(FILE-ENVIRONMENTS "ARRAY-TESTER")

Read Table: XCL

Package: XCL-USER

Format: XCCS

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```
(IL:RPAQQ IL:ARRAY-TESTERCOMS
  ((IL:FILES IL:TESTER)
   (IL:COMS
    ;; array-read and array-write
    (VERIFIED-TESTS ARRAY-READ-BIT ARRAY-READ-BYTE ARRAY-READ-WORD ARRAY-READ-SIGNED-WORD
     ARRAY-READ-FIXP ARRAY-READ-FLOATP ARRAY-READ-THIN-CHAR ARRAY-READ-FAT-CHAR
     ARRAY-READ-POINTER ARRAY-READ-XPOINTER)
    (VERIFIED-TESTS ARRAY-WRITE-BIT ARRAY-WRITE-BYTE ARRAY-WRITE-WORD ARRAY-WRITE-SIGNED-WORD
     ARRAY-WRITE-FIXP ARRAY-WRITE-FLOATP ARRAY-WRITE-THIN-CHAR ARRAY-WRITE-FAT-CHAR
     ARRAY-WRITE-POINTER ARRAY-WRITE-XPOINTER))
   (FILE-ENVIRONMENTS "ARRAY-TESTER")))
(IL:FILESLOAD IL:TESTER)
```

;; array-read and array-write

```
(DEFINE-VERIFIED-TEST ARRAY-READ-BIT "Opcode ARRAYREAD (MISC3 9), type (unsigned-byte 1)"
  (FLET ((ARRAY-READ-BIT (BASE INDEX)
    ((IL:OPCODES IL:MISC3 9)
     BASE 0 INDEX)))
  (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 8 0)))
    (IL:\\PUTBASEBYTE BASE 0 160)
    (WITH-COLLECTION (DOTIMES (I 4)
      (COLLECT (ARRAY-READ-BIT BASE I)))))))

(DEFINE-VERIFIED-TEST ARRAY-READ-BYTE "Opcode ARRAYREAD (MISC3 9), type (unsigned-byte 8)"
  (FLET ((ARRAY-READ-BYTE (BASE INDEX)
    ((IL:OPCODES IL:MISC3 9)
     BASE 3 INDEX)))
  (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 3)))
    (DO ((I 0 (1+ I))
      (X '(0 23 255 4)
       (CDR X)))
      ((EQ I 4)
       (IL:\\PUTBASEBYTE BASE I (CAR X)))
      (WITH-COLLECTION (DOTIMES (I 4)
        (COLLECT (ARRAY-READ-BYTE BASE I)))))))

(DEFINE-VERIFIED-TEST ARRAY-READ-WORD "Opcode ARRAYREAD (MISC3 9), type (unsigned-byte 16)"
  (FLET ((ARRAY-READ-WORD (BASE INDEX)
    ((IL:OPCODES IL:MISC3 9)
     BASE 4 INDEX)))
  (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 4)))
    (DO ((I 0 (1+ I))
      (X '(0 23 255 65535)
       (CDR X)))
      ((EQ I 4)
       (IL:\\PUTBASE BASE I (CAR X)))
      (WITH-COLLECTION (DOTIMES (I 4)
        (COLLECT (ARRAY-READ-WORD BASE I)))))))

(DEFINE-VERIFIED-TEST ARRAY-READ-SIGNED-WORD "Opcode ARRAYREAD (MISC3 9), type (signed-byte 16)"
  (FLET ((ARRAY-READ-SIGNED-WORD (BASE INDEX)
    ((IL:OPCODES IL:MISC3 9)
     BASE 20 INDEX)))
  (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 20)))
    (DO ((I 0 (1+ I))
      (X '(0 -23 255 -32768)
       (CDR X)))
      ((EQ I 4)
       (IL:\\PUTBASE BASE I (IL:\\LOLOC (CAR X))))
      (WITH-COLLECTION (DOTIMES (I 4)
        (COLLECT (ARRAY-READ-SIGNED-WORD BASE I)))))))

(DEFINE-VERIFIED-TEST ARRAY-READ-FIXP "Opcode ARRAYREAD (MISC3 9), type (signed-byte 32)"
  (FLET ((ARRAY-READ-FIXP (BASE INDEX)
    ((IL:OPCODES IL:MISC3 9)
     BASE 22 INDEX)))
```

```
(LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 22)))
  (DO ((I 0 (1+ I))
      (X '(0 -23 65536 -2147483648)
         (CDR X)))
    ((EQ I 4)
     (IL:\\PUTBASEFIXP BASE (ASH I 1)
      (CAR X)))
    (WITH-COLLECTION (DOTIMES (I 4)
                        (COLLECT (ARRAY-READ-FIXP BASE I))))))
```

```
(DEFINE-VERIFIED-TEST ARRAY-READ-FLOATP "Opcode ARRAYREAD (MISC3 9), type single-float"
  (FLET ((ARRAY-READ-FLOATP (BASE INDEX)
        ((IL:OPCODES IL:MISC3 9)
         BASE 54 INDEX)))
    (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 54)))
      (DO ((I 0 (1+ I))
          (X '(0.0 -23.0 3.4456E+24 -4.562435E-12)
             (CDR X)))
        ((EQ I 4)
         (IL:\\PUTBASEFLOATP BASE (ASH I 1)
          (CAR X)))
        (WITH-COLLECTION (DOTIMES (I 4)
                            (COLLECT (ARRAY-READ-FLOATP BASE I))))))
```

```
(DEFINE-VERIFIED-TEST ARRAY-READ-THIN-CHAR "Opcode ARRAYREAD (MISC3 9), type string-char"
  (FLET ((ARRAY-READ-THIN-CHAR (BASE INDEX)
        ((IL:OPCODES IL:MISC3 9)
         BASE 67 INDEX)))
    (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 67)))
      (DO ((I 0 (1+ I))
          (X '(#\a #\b #\c #\A)
             (CDR X)))
        ((EQ I 4)
         (IL:\\PUTBASEBYTE BASE I (CHAR-CODE (CAR X))))
        (WITH-COLLECTION (DOTIMES (I 4)
                            (COLLECT (ARRAY-READ-THIN-CHAR BASE I))))))
```

```
(DEFINE-VERIFIED-TEST ARRAY-READ-FAT-CHAR "Opcode ARRAYREAD (MISC3 9), type fat-string-char"
  (FLET ((ARRAY-READ-FAT-CHAR (BASE INDEX)
        ((IL:OPCODES IL:MISC3 9)
         BASE 68 INDEX)))
    (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 68)))
      (DO ((I 0 (1+ I))
          (X '(#\a #\b #\c #\A)
             (CDR X)))
        ((EQ I 4)
         (IL:\\PUTBASE BASE I (CHAR-CODE (CAR X))))
        (WITH-COLLECTION (DOTIMES (I 4)
                            (COLLECT (ARRAY-READ-FAT-CHAR BASE I))))))
```

```
(DEFINE-VERIFIED-TEST ARRAY-READ-POINTER "Opcode ARRAYREAD (MISC3 9), type t"
  (FLET ((ARRAY-READ-POINTER (BASE INDEX)
        ((IL:OPCODES IL:MISC3 9)
         BASE 38 INDEX)))
    (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 38)))
      (DO ((I 0 (1+ I))
          (X '(2 #\c 2.3 (A . B))
             (CDR X)))
        ((EQ I 4)
         (IL:\\RPLPTR BASE (ASH I 1)
          (CAR X)))
        (WITH-COLLECTION (DOTIMES (I 4)
                            (COLLECT (ARRAY-READ-POINTER BASE I))))))
```

```
(DEFINE-VERIFIED-TEST ARRAY-READ-XPOINTER "Opcode ARRAYREAD (MISC3 9), type il:xpointer"
  (FLET ((ARRAY-READ-XPOINTER (BASE INDEX)
        ((IL:OPCODES IL:MISC3 9)
         BASE 86 INDEX)))
    (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 86)))
      (DO ((I 0 (1+ I))
          (X '(2 #\c 2.3 (A . B))
             (CDR X)))
        ((EQ I 4)
         (IL:\\PUTBASEPTR BASE (ASH I 1)
          (CAR X)))
        (WITH-COLLECTION (DOTIMES (I 4)
                            (COLLECT (ARRAY-READ-XPOINTER BASE I))))))
```

```
(DEFINE-VERIFIED-TEST ARRAY-WRITE-BIT "Opcode ARRAYWRITE (MISC4 7), type (unsigned-byte 1)"
  (FLET ((ARRAY-WRITE-BIT (NEW-VALUE BASE INDEX)
        ((IL:OPCODES IL:MISC4 7)
         NEW-VALUE BASE 0 INDEX)))
    (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 8 0)))
      (IL:\\PUTBASEBYTE BASE 0 160)
      (WITH-COLLECTION (DO ((I 0 (1+ I))
                            (X '(1 0 1 0)
                               (CDR X))))
```

```

      ((EQ I 4))
      (COLLECT (ARRAY-WRITE-BIT (CAR X)
                               BASE I)))
(COLLECT (LET ((BYTE (IL:\GETBASEBYTE BASE 0)))
              (LIST (LDB (BYTE 1 7)
                        BYTE)
                    (LDB (BYTE 1 6)
                        BYTE)
                    (LDB (BYTE 1 5)
                        BYTE)
                    (LDB (BYTE 1 4)
                        BYTE))))))

```

```

(DEFINE-VERIFIED-TEST ARRAY-WRITE-BYTE "Opcode ARRAYWRITE (MISC4 7), type (unsigned-byte 8)"
  (FLET ((ARRAY-WRITE-BYTE (NEW-VALUE BASE INDEX)
                    ((IL:OPCODES IL:MISC4 7)
                     NEW-VALUE BASE 3 INDEX)))
    (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 3)))
      (WITH-COLLECTION (DO ((I 0 (1+ I))
                          (X '(0 23 255 4)
                             (CDR X)))
                        ((EQ I 4))
                        (COLLECT (ARRAY-WRITE-BYTE (CAR X)
                                                  BASE I)))
        (COLLECT (WITH-COLLECTION (DOTIMES (I 4)
                                          (COLLECT (IL:\GETBASEBYTE BASE I))))))))))

```

```

(DEFINE-VERIFIED-TEST ARRAY-WRITE-WORD "Opcode ARRAYWRITE (MISC4 7), type (unsigned-byte 16)"
  (FLET ((ARRAY-WRITE-WORD (NEW-VALUE BASE INDEX)
                    ((IL:OPCODES IL:MISC4 7)
                     NEW-VALUE BASE 4 INDEX)))
    (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 4)))
      (WITH-COLLECTION (DO ((I 0 (1+ I))
                          (X '(0 23 255 65535)
                             (CDR X)))
                        ((EQ I 4))
                        (COLLECT (ARRAY-WRITE-WORD (CAR X)
                                                  BASE I)))
        (COLLECT (WITH-COLLECTION (DOTIMES (I 4)
                                          (COLLECT (IL:\GETBASE BASE I))))))))))

```

```

(DEFINE-VERIFIED-TEST ARRAY-WRITE-SIGNED-WORD "Opcode ARRAYWRITE (MISC4 7), type (signed-byte 16)"
  (FLET ((ARRAY-WRITE-SIGNED-WORD (NEW-VALUE BASE INDEX)
                    ((IL:OPCODES IL:MISC4 7)
                     NEW-VALUE BASE 20 INDEX)))
    (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 20)))
      (WITH-COLLECTION (DO ((I 0 (1+ I))
                          (X '(0 -23 255 -32768)
                             (CDR X)))
                        ((EQ I 4))
                        (COLLECT (ARRAY-WRITE-SIGNED-WORD (CAR X)
                                                  BASE I)))
        (COLLECT (WITH-COLLECTION (DOTIMES (I 4)
                                          (COLLECT (LET ((WORD (IL:\GETBASE BASE I))
                                                      (IF (> WORD 32767)
                                                          (IL:\VAG2 15 WORD)
                                                          WORD))))))))))

```

```

(DEFINE-VERIFIED-TEST ARRAY-WRITE-FIXP "Opcode ARRAYWRITE (MISC4 7), type (signed-byte 32)"
  (FLET ((ARRAY-WRITE-FIXP (NEW-VALUE BASE INDEX)
                    ((IL:OPCODES IL:MISC4 7)
                     NEW-VALUE BASE 22 INDEX)))
    (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 22)))
      (WITH-COLLECTION (DO ((I 0 (1+ I))
                          (X '(0 -23 65536 -2147483648)
                             (CDR X)))
                        ((EQ I 4))
                        (COLLECT (ARRAY-WRITE-FIXP (CAR X)
                                                  BASE I)))
        (COLLECT (WITH-COLLECTION (DOTIMES (I 4)
                                          (COLLECT (IL:\GETBASEFIXP BASE (ASH I 1))))))))))

```

```

(DEFINE-VERIFIED-TEST ARRAY-WRITE-FLOATP "Opcode ARRAYWRITE (MISC4 7), type single-float"
  (FLET ((ARRAY-WRITE-FLOATP (NEW-VALUE BASE INDEX)
                    ((IL:OPCODES IL:MISC4 7)
                     NEW-VALUE BASE 54 INDEX)))
    (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 54)))
      (WITH-COLLECTION (DO ((I 0 (1+ I))
                          (X '(0.0 -23.0 3.4456E+24 -4.562435E-12)
                             (CDR X)))
                        ((EQ I 4))
                        (COLLECT (ARRAY-WRITE-FLOATP (CAR X)
                                                  BASE I)))
        (COLLECT (WITH-COLLECTION (DOTIMES (I 4)
                                          (COLLECT (IL:\GETBASEFLOATP BASE (ASH I 1))))))))))

```

```

(DEFINE-VERIFIED-TEST ARRAY-WRITE-THIN-CHAR "Opcode ARRAYWRITE (MISC4 7), type thin-string-char"

```

```
(FLET ((ARRAY-WRITE-THIN-CHAR (NEW-VALUE BASE INDEX)
      ((IL:OPCODES IL:MISC4 7)
       NEW-VALUE BASE 67 INDEX)))
 (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 67)))
   (WITH-COLLECTION (DO ((I 0 (1+ I))
                       (X ' (#\a #\b #\c #\A)
                          (CDR X)))
     ((EQ I 4))
    (COLLECT (ARRAY-WRITE-THIN-CHAR (CAR X)
                                     BASE I)))
   (COLLECT (WITH-COLLECTION (DOTIMES (I 4)
                                     (COLLECT (CODE-CHAR (IL:\\GETBASEBYTE BASE I))))))))))
```

```
(DEFINE-VERIFIED-TEST ARRAY-WRITE-FAT-CHAR "Opcode ARRAYWRITE (MISC4 7), type fat-string-char"
 (FLET ((ARRAY-WRITE-FAT-CHAR (NEW-VALUE BASE INDEX)
      ((IL:OPCODES IL:MISC4 7)
       NEW-VALUE BASE 68 INDEX)))
 (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 68)))
   (WITH-COLLECTION (DO ((I 0 (1+ I))
                       (X ' (#\a #\b #\c #\A)
                          (CDR X)))
     ((EQ I 4))
    (COLLECT (ARRAY-WRITE-FAT-CHAR (CAR X)
                                     BASE I)))
   (COLLECT (WITH-COLLECTION (DOTIMES (I 4)
                                     (COLLECT (CODE-CHAR (IL:\\GETBASE BASE I))))))))))
```

```
(DEFINE-VERIFIED-TEST ARRAY-WRITE-POINTER "Opcode ARRAYWRITE (MISC4 7), type t"
 (FLET ((ARRAY-WRITE-POINTER (NEW-VALUE BASE INDEX)
      ((IL:OPCODES IL:MISC4 7)
       NEW-VALUE BASE 38 INDEX)))
 (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 38)))
   (WITH-COLLECTION (DO ((I 0 (1+ I))
                       (X (LIST 2 #\c 'A (CONS 'A 'B))
                          (CDR X)))
     ((EQ I 4))
    (COLLECT (ARRAY-WRITE-POINTER (CAR X)
                                     BASE I)))
   (COLLECT (WITH-COLLECTION (DOTIMES (I 4)
                                     (COLLECT (CONS (IL:\\GETBASEPTR BASE (ASH I 1))
                                                    (IL:\\REFCNT (IL:\\GETBASEPTR BASE
                                                                (ASH I 1))))))))))))))
```

```
(DEFINE-VERIFIED-TEST ARRAY-WRITE-XPOINTER "Opcode ARRAYWRITE (MISC4 7), type il:xpointer"
 (FLET ((ARRAY-WRITE-XPOINTER (NEW-VALUE BASE INDEX)
      ((IL:OPCODES IL:MISC4 7)
       NEW-VALUE BASE 86 INDEX)))
 (LET ((BASE (IL:%MAKE-ARRAY-STORAGE 4 86)))
   (WITH-COLLECTION (DO ((I 0 (1+ I))
                       (X (LIST 2 #\c 'A (CONS 'A 'B))
                          (CDR X)))
     ((EQ I 4))
    (COLLECT (ARRAY-WRITE-XPOINTER (CAR X)
                                     BASE I)))
   (COLLECT (WITH-COLLECTION (DOTIMES (I 4)
                                     (COLLECT (CONS (IL:\\GETBASEPTR BASE (ASH I 1))
                                                    (IL:\\REFCNT (IL:\\GETBASEPTR BASE
                                                                (ASH I 1))))))))))))))
```

```
(DEFINE-FILE-ENVIRONMENT "ARRAY-TESTER" :PACKAGE "XCL-USER"
 :READTABLE "XCL"
 :COMPILER :COMPILE-FILE)
```

```
(IL:PUTPROPS IL:ARRAY-TESTER IL:COPYRIGHT ("Xerox Corporation" 1988))
```

FILE-ENVIRONMENT INDEX

"ARRAY-TESTER"4
