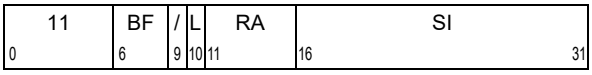
Compare Immediate D-form

cmpi BF,L,RA,SI




```
if L = 0 then a ← EXTS((RA)32:63)
         else a ← (RA)
if      a < EXTS(SI) then c ← 0b100
else if a > EXTS(SI) then c ← 0b010
else                      c ← 0b001
CR4×BF+32:4×BF+35 ← c || XERSO
```

The contents of register RA ($(RA)_{32:63}$ sign-extended to 64 bits if L=0) are compared with the sign-extended value of the SI field, treating the operands as signed integers. The result of the comparison is placed into CR field BF.

Special Registers Altered:

CR field BF

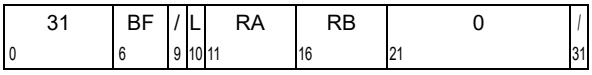
Extended Mnemonics:

Examples of extended mnemonics for *Compare Immediate*:

Extended mnemonic:		*Equivalent to:*	
cmpdi	Rx,value	cmpi	0,1,Rx,value
cmpwi	cr3,Rx,value	cmpi	3,0,Rx,value

Compare X-form

cmp BF,L,RA,RB




```
if L = 0 then a ← EXTS((RA)32:63)
              b ← EXTS((RB)32:63)
         else a ← (RA)
              b ← (RB)
if      a < b then c ← 0b100
else if a > b then c ← 0b010
else               c ← 0b001
CR4×BF+32:4×BF+35 ← c || XERSO
```

The contents of register RA ($(RA)_{32:63}$ if L=0) are compared with the contents of register RB ($(RB)_{32:63}$ if L=0), treating the operands as signed integers. The result of the comparison is placed into CR field BF.

Special Registers Altered:

CR field BF

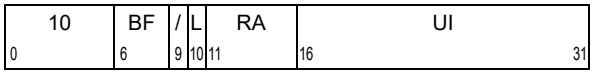
Extended Mnemonics:

Examples of extended mnemonics for *Compare*:

Extended mnemonic:		*Equivalent to:*	
cmpd	Rx,Ry	cmp	0,1,Rx,Ry
cmpd	cr3,Rx,Ry	cmp	3,0,Rx,Ry

Compare Logical Immediate D-form

cmpli BF,L,RA,UI




```
if L = 0 then a ← 320 || (RA)32:63
         else a ← (RA)
if      a <u (480 || UI) then c ← 0b100
else if a >u (480 || UI) then c ← 0b010
else                          c ← 0b001
CR4×BF+32:4×BF+35 ← c || XERSO
```

The contents of register RA ($(RA)_{32:63}$ zero-extended to 64 bits if L=0) are compared with $^{48}0$ || UI, treating the operands as unsigned integers. The result of the comparison is placed into CR field BF.

Special Registers Altered:

CR field BF

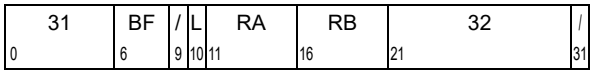
Extended Mnemonics:

Examples of extended mnemonics for *Compare Logical Immediate*:

Extended mnemonic:		*Equivalent to:*	
cmpldi	Rx,value	cmpli	0,1,Rx,value
cmplwi	cr3,Rx,value	cmpli	3,0,Rx,value

Compare Logical X-form

cmpl BF,L,RA,RB




```
if L = 0 then a ← 320 || (RA)32:63
              b ← 320 || (RB)32:63
         else a ← (RA)
              b ← (RB)
if      a <u b then c ← 0b100
else if a >u b then c ← 0b010
else               c ← 0b001
CR4×BF+32:4×BF+35 ← c || XERSO
```

The contents of register RA ($(RA)_{32:63}$ if L=0) are compared with the contents of register RB ($(RB)_{32:63}$ if L=0), treating the operands as unsigned integers. The result of the comparison is placed into CR field BF.

Special Registers Altered:

CR field BF

Extended Mnemonics:

Examples of extended mnemonics for *Compare Logical*:

Extended mnemonic:		*Equivalent to:*	
cmpld	Rx,Ry	cmpl	0,1,Rx,Ry
cmplw	cr3,Rx,Ry	cmpl	3,0,Rx,Ry