**Result 1: evaluate PDU, IOV and CT for DSA-IS and eSAIS on guten\_14G.**

1. **PDU**

y\_pdu = [16.1116, 23.29157366;17.294, 23.82777623]

bar(y\_pdu, 0.5)

set(gca,'XTickLabel',{'guten\_14G','enwiki\_14G'})

set(gca, 'fontsize',14)

set(gcf,'color','white')

ylabel('PDU[byte/ch]')

xlim([0.5,3.5])

legend('DSA-IS','eSAIS')

applyhatch(gcf,'\-x.')

1. **CT**

y\_ct = [50698.2, 46183.8; 54416.3, 50638.1]

bar(y\_ct, 0.5)

set(gca,'XTickLabel',{'guten\_14G','enwiki\_14G'})

set(gcf,'color','white')

set(gca, 'fontsize',14)

xlabel('corpora'),ylabel('CT[us/ch]')

xlim([0.5,3.5])

legend('DSA-IS','eSAIS')

applyhatch(gcf,'\-x.')

1. **IOV**

y\_iov = [237.101, 173.9375; 267.098, 200.9327393]

bar(y\_iov, 0.5)

set(gca,'XTickLabel',{'guten\_14G','enwiki\_14G'})

set(gcf,'color','white')

set(gca, 'fontsize',14)

ylabel('IOV[byte/ch]')

xlim([0.5,3.5])

legend('DSA-IS','eSAIS')

applyhatch(gcf,'\-x.')

**Result 2: evaluate PDU, IOV and CT for DSAIS, DSAIS+ (D = 8, H = 10) and eSAIS on guten, where the size of the input corpora increases from 1G to 14G.**

1. **PDU**

set(gca, 'fontsize',14)

x\_pdu = [1, 2, 4, 8, 14]

y\_pdu\_dsais = [15.3911, 15.4458, 15.2025, 15.9457, 16.1116]

y\_pdu\_edsais = [15.20361328, 15.38208008, 15.265625, 16.00823975, 16.14714704]

y\_pdu\_esais = [22.29980469, 22.58056641, 22.76025391, 22.95812988, 23.29157366]

plot(x\_pdu, y\_pdu\_dsais,'-o', x\_pdu, y\_pdu\_edsais,'-+', x\_pdu, y\_pdu\_esais, '-\*')

ylabel('PDU[byte/ch]')

xlim([0,20])

ylim([0,35])

legend('DSA-IS','DSA-IS+','eSAIS')

1. **IOV**

set(gca, 'fontsize',14)

x\_io = [1, 2, 4, 8, 14]

y\_io\_dsais = [155.844, 163.43, 186.024, 207.215, 237.101]

y\_io\_edsais = [124.2026367, 127.5910645, 143.3735352, 153.8162231, 171.8310198]

y\_io\_esais = [138.7558594, 147.9858398, 161.8806152, 173.9375, 189.5507115]

plot(x\_io, y\_io\_dsais, '-o', x\_io,y\_io\_edsais, '-+', x\_io,y\_io\_esais, '-\*')

ylabel('IOV[byte/ch]')

xlim([0,20])

ylim([100,350])

legend('DSA-IS','DSA-IS+','eSAIS')

1. **CT**

set(gca, 'fontsize',14)

x\_ct = [1, 2, 4, 8, 14]

y\_ct\_dsais = [3.306064755, 2.701240592, 2.941815183, 2.927426249, 3.372598439]

y\_ct\_edsais = [3.094025888, 1.967109274, 2.388190478, 2.747261897, 2.825379904]

y\_ct\_esais = [2.148784697, 2.658185549, 2.725142986, 2.545304596, 3.072286823]

plot(x\_ct, y\_ct\_dsais, '-o', x\_ct, y\_ct\_edsais, '-+', x\_ct, y\_ct\_esais, '-\*')

xlabel('input size[GiB]')

ylabel('CT[us/ch]')

xlim([0,20])

ylim([0,5])

legend('DSA-IS','DSA-IS+','eSAIS')

**Result 3: evaluate PDU, IOV and CT for DSAIS, DSAIS+ (D = 8, H = 10) and eSAIS on enwiki, where the size of the input corpora increases from 1G to 14G.**

1. **PDU**

set(gca, 'fontsize',14)

x\_pdu = [1, 2, 4, 8, 14]

y\_pdu\_dsais = [15.9773, 15.9379, 17.8889, 17.294, 16.8676]

y\_pdu\_edsais = [15.82373047, 15.77661133, 15.78259277, 17.9362793, 17.03864397]

y\_pdu\_esais = [23.86132813, 24.38330078, 24.16381836, 23.85571289, 23.82777623]

plot(x\_pdu, y\_pdu\_dsais, '-o', x\_pdu, y\_pdu\_edsais, '-+', x\_pdu, y\_pdu\_esais, '-\*')

ylabel('PDU[byte/ch]')

xlim([0,20])

ylim([0,35])

legend('DSA-IS','DSA-IS+','eSAIS')

1. **IOV**

set(gca, 'fontsize',14)

x\_io = [1, 2, 4, 8, 14]

y\_io\_dsais = [187.2939453, 191.815918, 213.2497559, 240.2733154, 268.5530483]

y\_io\_edsais = [143.5058594, 144.2617188, 159.5319824, 173.6712646, 186.2647531]

y\_io\_esais = [169.5214844, 177.8984375, 187.8293457, 200.9327393, 207.1469029]

plot(x\_io, y\_io\_dsais, '-o', x\_io, y\_io\_edsais, '-+', x\_io, y\_io\_esais, '-\*')

ylabel('IOV[byte/ch]')

xlim([0,20])

ylim([100,350])

legend('DSA-IS','DSA-IS+','eSAIS')

1. **CT**

set(gca, 'fontsize',14)

x\_ct = [1, 2, 4, 8, 14]

y\_ct\_dsais = [2.632425167, 2.703489736, 3.028765786, 3.619937758, 3.52190109]

y\_ct\_edsais = [2.326057293, 2.479632385, 3.00607644, 3.177172039, 3.066382903]

y\_ct\_esais = [2.809483558, 2.334658056, 2.442556433, 3.101897892, 3.368600405]

plot(x\_ct, y\_ct\_dsais, '-o', x\_ct, y\_ct\_edsais, '-+', x\_ct, y\_ct\_esais, '-\*')

xlabel('input size[GiB]')

ylabel('CT[us/ch]')

xlim([0,20])

ylim([0,5])

legend('DSA-IS','DSA-IS+','eSAIS')

**Result 3: evaluate PDU, IOV and CT for DSAIS+ and eSAIS on guten, where $D1 = 8$, $D2$ ranges in {6, 8, 10, 12} and the input corpora increases from 1G to 14G.**

1. **PDU**

set(gca, 'fontsize',14)

x\_pdu = [1, 2, 4, 8, 14]

y\_pdu\_edsais1 = [15.20361328, 15.38208008, 15.265625, 16.00823975, 16.14714704]

y\_pdu\_edsais2 = [15.20361328, 15.38208008, 15.265625, 16.00823975, 16.14714704]

y\_pdu\_edsais3 = [15.20361328, 15.38208008, 15.265625, 16.00823975, 16.14714704]

y\_pdu\_edsais4 = [15.20361328, 15.38208008, 15.265625, 16.00823975, 16.14714704]

y\_pdu\_esais = [22.29980469, 22.58056641, 22.76025391, 22.95812988, 23.29157366]

plot(x\_pdu, y\_pdu\_edsais1, '-+', x\_pdu, y\_pdu\_edsais2, '-o', x\_pdu, y\_pdu\_edsais3, '-\*', x\_pdu, y\_pdu\_edsais4, '-diamond', x\_pdu, y\_pdu\_esais, '-^')

xlabel('input size[GiB]')

ylabel('PDU[byte/ch]')

xlim([0,20])

ylim([0,45])

legend('D1 = 8, D2 = 6', 'D1 = 8, D2 = 8', 'D1 = 8, D2 = 10', 'D1 = 8, D2 = 12', 'eSAIS')

1. **IOV**

set(gca, 'fontsize',14)

x\_io = [1, 2, 4, 8, 14]

y\_io\_edsais1 = [125.019043, 128.4221191, 144.3544922, 154.8147583, 172.8309501]

y\_io\_edsais2 = [124.2241211, 127.6442871, 143.4196777, 153.8638306, 171.8649902]

y\_io\_edsais3 = [124.2026367, 127.5910645, 143.3735352, 153.8162231, 171.8310198]

y\_io\_edsais4 = [124.2084961, 127.5881348, 143.3657227, 153.8290405, 171.8425293]

y\_io\_esais = [138.7558594, 147.9858398, 161.8806152, 173.9375, 189.5507115]

plot(x\_io, y\_io\_edsais1, '-+', x\_io, y\_io\_edsais2, '-o', x\_io, y\_io\_edsais3, '-\*', x\_io, y\_io\_edsais4, '-diamond', x\_io, y\_io\_esais, '-^')

xlabel('input size[GiB]')

ylabel('IOV[byte/ch]')

xlim([0,20])

ylim([0,350])

legend('D1 = 8, D2 = 6', 'D1 = 8, D2 = 8', 'D1 = 8, D2 = 10', 'D1 = 8, D2 = 12', 'eSAIS')

1. **CT**

set(gca, 'fontsize',14)

x\_ct = [1, 2, 4, 8, 14]

y\_ct\_edsais1 = [3.218906932, 1.945102122, 2.330960706, 2.721045166, 3.091395567]

y\_ct\_edsais2 = [3.069620579, 1.940571237, 2.365594264, 2.721662167, 2.912900943]

y\_ct\_edsais3 = [3.094025888, 1.967109274, 2.388190478, 2.747261897, 2.825379904]

y\_ct\_edsais4 = [3.093262203, 2.080751583, 2.557144035, 2.781511284, 2.829607443]

y\_ct\_esais = [2.148784697, 2.658185549, 2.725142986, 2.545304596, 3.072286823]

plot(x\_ct, y\_ct\_edsais1, '-+', x\_ct, y\_ct\_edsais2, '-o', x\_ct, y\_ct\_edsais3, '-\*', x\_ct, y\_ct\_edsais4, '-diamond', x\_ct, y\_ct\_esais, '-^')

xlabel('input size[GiB]')

ylabel('CT[byte/ch]')

xlim([0,20])

ylim([0,6])

legend('D1 = 8, D2 = 6', 'D1 = 8, D2 = 8', 'D1 = 8, D2 = 10', 'D1 = 8, D2 = 12', 'eSAIS')

**Result 4: evaluate the time and I/O volume of reduction and induction phase for DSAIS+ on enwiki, where $D1 = 8$, $D2 = 10$ and the input corpora increases from 1G to 14G.**

set(gca, 'fontsize',14)

x = [1, 2, 4, 8, 14]

y\_ct\_edsais = [0.454806951, 0.487698606, 0.476371435, 0.41200211, 0.354475725]

y\_iov\_edsais = [0.374686043, 0.355021703, 0.362732392, 0.336626268, 0.308261679]

plot(x, y\_ct\_edsais, '-+', x, y\_iov\_edsais, '-o')

xlabel('input size[GiB]')

ylabel('Ratio[reduction/induction]')

xlim([0,16])

ylim([0,1])

legend('CT ratio', 'IOV ratio')

Result 5: evaluate the CT, PDU and IOV for DSAIS+ and CM1, DSAIS+ and CM2 and eSAIS and checker2.

1. **PDU**

set(gca, 'fontsize',14)

x\_pdu = [1, 2, 4, 8]

y\_pdu\_edsais1 = [15.82373047, 15.77661133, 15.78259277, 17.93622505]

y\_pdu\_edsais2 = [26.00195313, 26.00097656, 26.00043081, 26.00019798]

y\_pdu\_esais = [27.00292969, 27.00146484, 27.00067125, 27.00032201]

plot(x\_pdu, y\_pdu\_edsais1, '-+', x\_pdu, y\_pdu\_edsais2, '-o', x\_pdu, y\_pdu\_esais, '-\*')

xlabel('input size[GiB]')

ylabel('PDU[byte/ch]')

xlim([0,10])

ylim([0,45])

legend('DSA-IS+ with CM1', 'DSA-IS+ with CM2', 'eSAIS with CM2')

1. **IOV**

set(gca, 'fontsize',14)

x\_io = [1, 2, 4, 8]

y\_io\_edsais1 = [149.9657519, 150.6449189, 165.9170957, 180.0176688]

y\_io\_edsais2 = [201.4883794, 202.2597473, 217.5598638, 231.686281]

y\_io\_esais = [216.9639853, 223.7041016, 233.6708984, 246.9313965]

plot(x\_io, y\_io\_edsais1, '-+', x\_io, y\_io\_edsais2, '-o', x\_io, y\_io\_esais, '-\*')

xlabel('input size[GiB]')

ylabel('IOV[byte/ch]')

xlim([0,10])

ylim([0,350])

legend('DSA-IS+ with CM1', 'DSA-IS+ with CM2', 'eSAIS with CM2')

1. **CT**

set(gca, 'fontsize',14)

x\_ct = [1, 2, 4, 8]

y\_ct\_edsais1 = [2.575144172, 2.247523516, 2.854969352, 3.103364725]

y\_ct\_edsais2 = [3.758897074, 3.535954747, 3.38552054, 4.007661482]

y\_ct\_esais = [3.042851575, 3.443408059, 4.207886755, 3.741355613]

plot(x\_ct, y\_ct\_edsais1, '-+', x\_ct, y\_ct\_edsais2, '-o', x\_ct, y\_ct\_esais, '-\*')

xlabel('input size[GiB]')

ylabel('CT[byte/ch]')

xlim([0,10])

ylim([0,6])

legend('DSA-IS+ with CM1', 'DSA-IS+ with CM2', 'eSAIS with CM2')

|  |
| --- |
|  |