

```
%8:
%9 = sext i32 %3 to i64
%10 = icmp slt i64 %9, 256
%11 = select i1 %10, i64 %9, i64 256
%sub.i = add i32 %3, -2
%cmp258.i = icmp sgt i32 %3, 2, !llvm.access.group !12
%mul.i.i = shl i64 %5, 8
%12 = sext i32 %sub.i to i64
%wide.trip.count.i = zext i32 %sub.i to i64
%min.its.check.i = icmp ult i32 %sub.i, 8
%13 = add nsw i64 %wide.trip.count.i, -1
%14 = trunc i64 %13 to i32
%15 = icmp ugt i64 %13, 4294967295
%mul6.i = tail call @ i64, i1 } @llvm.umul.with.overflow.i64(i64 %i3, i64 4)
... #3
%mul.result7.i = extractvalue { i64, i1 } %mul6.i, 0
%mul.overflow8.i = extractvalue { i64, i1 } %mul6.i, 1
%n.vec.i = and i64 %wide.trip.count.i, 4294967288
%16 = getelementptr inbounds float, float* %2, i64 -7
%17 = getelementptr inbounds float, float* %0, i64 -7
%18 = getelementptr inbounds float, float* %1, i64 -7
%cmp.n.i = icmp eq i64 %n.vec.i, %wide.trip.count.i
%19 = icmp ugt i64 %11, 1
%umax = select i1 %19, i64 %11, i64 1
br label %region_for_entry.entry.i
```

```
pregion for entry.entry.i:
% local id x.0 = phi i64 [ 0, %8 ], [ %87, %if.end.i ]
br i1 %cmp258.i, label %for.body.lr.ph.i, label %if.end.i,
... !llvm.access.group !12
```

```
for.body.lr.ph.i:
%add1.i.i = add i64 %local_id_x.0, %mul.i.i, !llvm.access.group !12
%conv.i = trunc i64 %add1.i.i to i32, !llvm.access.group !12
%mul.i = mul nsw i32 %conv.i, %3, !llvm.access.group !12
%sub21.i = add i32 %mul.i, %3, !llvm.access.group !12
%sub22.i = add i32 %sub21.i, -3, !llvm.access.group !12
%20 = sext i32 %mul.i to i64, !llvm.access.group !12
%sub9.i = add i32 %mul.i, -1, !llvm.access.group !12
br i1 %min.its.check.i, label %for.body.i.preheader, label
... %vector.scevcheck.i, !llvm.access.group !12
```

```
vector.scevcheck.i:
%21 = add i32 %sub.i, %mul.i, !llvm.access.group !12
%22 = sub i32 %21, %14, !llvm.access.group !12
%23 = icmp sgt i32 %22, %21, !llvm.access.group !12
%24 = sub i32 %sub22.i, %14, !llvm.access.group !12
%25 = icmp sgt i32 %24, %sub22.i, !llvm.access.group !12
%26 = or i1 %15, %25, !llvm.access.group !12
%27 = or i1 %26, %23, !llvm.access.group !12
%28 = sext i32 %21 to i64, !llvm.access.group !12
%scevgep.i = getelementptr float, float* %2, i64 %28, !llvm.access.group !12
%scevgep5.i = ptrtoint float* %scevgep.i to i64, !llvm.access.group !12
%29 = icmp ugt i64 %mul.result7.i, %scevgep5.i, !llvm.access.group !12
%30 = or i1 %mul.overflow8.i, %29, !llvm.access.group !12
%31 = or i1 %27, %30, !llvm.access.group !12
%32 = add nsw i64 %20, %12, !llvm.access.group !12
%scevgep9.i = getelementptr float, float* %2, i64 %32, !llvm.access.group !12
%scevgep910.i = ptrtoint float* %scevgep9.i to i64, !llvm.access.group !12
%33 = icmp ugt i64 %mul.result7.i, %scevgep910.i, !llvm.access.group !12
%34 = or i1 %33, %31, !llvm.access.group !12
%35 = sext i32 %sub22.i to i64, !llvm.access.group !12
%scevgep14.i = getelementptr float, float* %2, i64 %35, !llvm.access.group
... !12
%scevgep1415.i = ptrtoint float* %scevgep14.i to i64, !llvm.access.group !12
%36 = icmp ugt i64 %mul.result7.i, %scevgep1415.i, !llvm.access.group !12
%37 = or i1 %36, %34, !llvm.access.group !12
%scevgep19.i = getelementptr float, float* %0, i64 %35, !llvm.access.group
... !12
%scevgep1920.i = ptrtoint float* %scevgep19.i to i64, !llvm.access.group !12
%38 = icmp ugt i64 %mul.result7.i, %scevgep1920.i, !llvm.access.group !12
%39 = or i1 %mul.overflow8.i, %38, !llvm.access.group !12
%40 = or i1 %39, %37, !llvm.access.group !12
%scevgep24.i = getelementptr float, float* %1, i64 %35, !llvm.access.group
... !12
%scevgep2425.i = ptrtoint float* %scevgep24.i to i64, !llvm.access.group !12
%41 = icmp ugt i64 %mul.result7.i, %scevgep2425.i, !llvm.access.group !12
%42 = or i1 %41, %40, !llvm.access.group !12
br i1 %42, label %for.body.i.preheader, label %vector.memcheck.i,
... !llvm.access.group !12
```

```
vector.memcheck.i:
%43 = add nsw i64 %28, 1, !llvm.access.group !12
%44 = sub nsw i64 %43, %wide.trip.count.i, !llvm.access.group !12
%scevgep29.i = getelementptr float, float* %2, i64 %44, !llvm.access.group
... !12
%scevgep31.i = getelementptr float, float* %2, i64 %43, !llvm.access.group
... !12
%45 = add nsw i64 %32, 1, !llvm.access.group !12
%46 = sub nsw i64 %45, %wide.trip.count.i, !llvm.access.group !12
%scevgep33.i = getelementptr float, float* %2, i64 %46, !llvm.access.group
... !12
%scevgep35.i = getelementptr float, float* %2, i64 %45, !llvm.access.group
... !12
%47 = add nsw i64 %35, 1, !llvm.access.group !12
%48 = sub nsw i64 %47, %wide.trip.count.i, !llvm.access.group !12
%scevgep37.i = getelementptr float, float* %2, i64 %48, !llvm.access.group
... !12
%scevgep39.i = getelementptr float, float* %2, i64 %47, !llvm.access.group
... !12
%scevgep41.i = getelementptr float, float* %0, i64 %48, !llvm.access.group
... !12
%scevgep43.i = getelementptr float, float* %0, i64 %47, !llvm.access.group
... !12
%scevgep45.i = getelementptr float, float* %1, i64 %48, !llvm.access.group
... !12
%scevgep47.i = getelementptr float, float* %1, i64 %47, !llvm.access.group
... !12
%bound0.i = icmp ult float* %scevgep29.i, %scevgep35.i, !llvm.access.group
... !12
%bound1.i = icmp ult float* %scevgep33.i, %scevgep31.i, !llvm.access.group
... !12
%found.conflict.i = and i1 %bound0.i, %bound1.i, !llvm.access.group !12
%bound049.i = icmp ult float* %scevgep29.i, %scevgep39.i, !llvm.access.group
... !12
%bound150.i = icmp ult float* %scevgep37.i, %scevgep31.i, !llvm.access.group
... !12
%found.conflict51.i = and i1 %bound150.i, %bound049.i, !llvm.access.group !12
%conflict.rdx.i = or i1 %found.conflict.i, %found.conflict51.i,
... !llvm.access.group !12
%bound052.i = icmp ult float* %scevgep29.i, %scevgep43.i, !llvm.access.group
... !12
%bound153.i = icmp ult float* %scevgep41.i, %scevgep31.i, !llvm.access.group
... !12
%found.conflict54.i = and i1 %bound153.i, %bound052.i, !llvm.access.group !12
%conflict.rdx55.i = or i1 %found.conflict54.i, %conflict.rdx.i,
... !llvm.access.group !12
%bound056.i = icmp ult float* %scevgep29.i, %scevgep47.i, !llvm.access.group
... !12
%bound157.i = icmp ult float* %scevgep45.i, %scevgep31.i, !llvm.access.group
... !12
%found.conflict58.i = and i1 %bound157.i, %bound056.i, !llvm.access.group !12
%conflict.rdx59.i = or i1 %found.conflict58.i, %conflict.rdx55.i,
... !llvm.access.group !12
br i1 %conflict.rdx59.i, label %for.body.i.preheader, label
... %vector.body.i.preheader, !llvm.access.group !12
```

```
vector.body.i.preheader:
br label %vector.body.i
```

```
vector.body.i:
%index.next.i1 = phi i64 [ %index.next.i, %vector.body.i ], [ 0,
... %vector.body.i.preheader ]
%49 = sub nsw i64 %12, %index.next.i1, !llvm.access.group !12
%50 = add nsw i64 %49, %20, !llvm.access.group !12
%51 = getelementptr inbounds float, float* %16, i64 %50, !llvm.access.group
... !12
%52 = bitcast float* %51 to <8 x float>*, !llvm.access.group !12
%wide.load.i = load <8 x float>, <8 x float>* %52, align 4, !tbaa !14,
... !alias.scope !18, !llvm.access.group !12
%reverse.i = shufflevector <8 x float> %wide.load.i, <8 x float> undef, <8 x
... i32> <i32 7, i32 6, i32 5, i32 4, i32 3, i32 2, i32 1, i32 0>,
... !llvm.access.group !12
%53 = trunc i64 %49 to i32, !llvm.access.group !12
%54 = add i32 %sub9.i, %53, !llvm.access.group !12
%55 = sext i32 %54 to i64, !llvm.access.group !12
%56 = getelementptr inbounds float, float* %16, i64 %55, !llvm.access.group
... !12
%57 = bitcast float* %56 to <8 x float>*, !llvm.access.group !12
%wide.load60.i = load <8 x float>, <8 x float>* %57, align 4, !tbaa !14,
... !alias.scope !21, !llvm.access.group !12
%reverse61.i = shufflevector <8 x float> %wide.load60.i, <8 x float> undef,
... <8 x i32> <i32 7, i32 6, i32 5, i32 4, i32 3, i32 2, i32 1, i32 0>,
... !llvm.access.group !12
%58 = trunc i64 %index.next.i1 to i32, !llvm.access.group !12
%59 = sub i32 %3, %58, !llvm.access.group !12
%60 = add i32 %59, %mul.i, !llvm.access.group !12
%61 = add i32 %60, -3, !llvm.access.group !12
%62 = sext i32 %61 to i64, !llvm.access.group !12
%63 = getelementptr inbounds float, float* %17, i64 %62, !llvm.access.group
... !12
%64 = bitcast float* %63 to <8 x float>*, !llvm.access.group !12
%wide.load62.i = load <8 x float>, <8 x float>* %64, align 4, !tbaa !14,
... !alias.scope !23, !llvm.access.group !12
%reverse63.i = shufflevector <8 x float> %wide.load62.i, <8 x float> undef,
... <8 x i32> <i32 7, i32 6, i32 5, i32 4, i32 3, i32 2, i32 1, i32 0>,
... !llvm.access.group !12
%65 = fneg <8 x float> %reverse61.i, !llvm.access.group !12
%66 = tail call <8 x float> @llvm.fmuladd.v8f32(<8 x float> %65, <8 x float>
... %reverse63.i, <8 x float> %reverse.i) #3, !llvm.access.group !12
%67 = sub i32 %sub22.i, %58, !llvm.access.group !12
%68 = sext i32 %67 to i64, !llvm.access.group !12
%69 = getelementptr inbounds float, float* %18, i64 %68, !llvm.access.group
... !12
%70 = bitcast float* %69 to <8 x float>*, !llvm.access.group !12
%wide.load64.i = load <8 x float>, <8 x float>* %70, align 4, !tbaa !14,
... !alias.scope !25, !llvm.access.group !12
%reverse65.i = shufflevector <8 x float> %wide.load64.i, <8 x float> undef,
... <8 x i32> <i32 7, i32 6, i32 5, i32 4, i32 3, i32 2, i32 1, i32 0>,
... !llvm.access.group !12
%71 = fdiv <8 x float> %66, %reverse65.i, !fpmath !27, !llvm.access.group !12
%72 = add i32 %60, -2, !llvm.access.group !12
%73 = sext i32 %72 to i64, !llvm.access.group !12
%reverse66.i = shufflevector <8 x float> %71, <8 x float> undef, <8 x i32>
... <i32 7, i32 6, i32 5, i32 4, i32 3, i32 2, i32 1, i32 0>, !llvm.access.group
... !12
%74 = getelementptr inbounds float, float* %16, i64 %73, !llvm.access.group
... !12
%75 = bitcast float* %74 to <8 x float>*, !llvm.access.group !12
store <8 x float> %reverse66.i, <8 x float>* %75, align 4, !tbaa !14,
... !alias.scope !28, !noalias !30, !llvm.access.group !12
%index.next.i = add i64 %index.next.i1, 8, !llvm.access.group !12
%76 = icmp eq i64 %index.next.i, %n.vec.i, !llvm.access.group !12
br i1 %76, label %middle.block.i, label %vector.body.i, !llvm.loop !31,
... !llvm.access.group !12
```

```
middle.block.i:
br i1 %cmp.n.i, label %if.end.i, label %for.body.i.preheader,
... !llvm.access.group !12
```

```
for.body.i.preheader:
%indvars.iv.next.i3.ph = phi i64 [ 0, %for.body.lr.ph.i ], [ 0,
... %vector.scevcheck.i ], [ 0, %vector.memcheck.i ], [ %n.vec.i, %middle.block.i
... ]
br label %for.body.i
```

```
for.body.i:
%indvars.iv.next.i3 = phi i64 [ %indvars.iv.next.i, %for.body.i ], [
... %indvars.iv.next.i3.ph, %for.body.i.preheader ]
%77 = sub nsw i64 %12, %indvars.iv.next.i3, !llvm.access.group !12
%78 = add nsw i64 %77, %20, !llvm.access.group !12
%arrayidx.i = getelementptr inbounds float, float* %2, i64 %78,
... !llvm.access.group !12
%79 = load float, float* %arrayidx.i, align 4, !tbaa !14, !llvm.access.group
... !12
%80 = trunc i64 %77 to i32, !llvm.access.group !12
%add10.i = add i32 %sub9.i, %80, !llvm.access.group !12
%idxprom11.i = sext i32 %add10.i to i64, !llvm.access.group !12
%arrayidx12.i = getelementptr inbounds float, float* %2, i64 %idxprom11.i,
... !llvm.access.group !12
%81 = load float, float* %arrayidx12.i, align 4, !tbaa !14,
... !llvm.access.group !12
%82 = trunc i64 %indvars.iv.next.i3 to i32, !llvm.access.group !12
%83 = sub i32 %3, %82, !llvm.access.group !12
%sub15.i = add i32 %83, %mul.i, !llvm.access.group !12
%add16.i = add i32 %sub15.i, -3, !llvm.access.group !12
%idxprom17.i = sext i32 %add16.i to i64, !llvm.access.group !12
%arrayidx18.i = getelementptr inbounds float, float* %0, i64 %idxprom17.i,
... !llvm.access.group !12
%84 = load float, float* %arrayidx18.i, align 4, !tbaa !14,
... !llvm.access.group !12
%neg.i = fneg float %81, !llvm.access.group !12
%65 = tail call float @llvm.fmuladd.f32(float %neg.i, float %84, float %79)
... #3, !llvm.access.group !12
%add23.i = sub i32 %sub22.i, %82, !llvm.access.group !12
%idxprom24.i = sext i32 %add23.i to i64, !llvm.access.group !12
%arrayidx25.i = getelementptr inbounds float, float* %1, i64 %idxprom24.i,
... !llvm.access.group !12
%86 = load float, float* %arrayidx25.i, align 4, !tbaa !14,
... !llvm.access.group !12
%div.i = fdiv float %85, %86, !fpmath !27, !llvm.access.group !12
%add29.i = add i32 %sub15.i, -2, !llvm.access.group !12
%idxprom30.i = sext i32 %add29.i to i64, !llvm.access.group !12
%arrayidx31.i = getelementptr inbounds float, float* %2, i64 %idxprom30.i,
... !llvm.access.group !12
store float %div.i, float* %arrayidx31.i, align 4, !tbaa !14,
... !llvm.access.group !12
%indvars.iv.next.i = add nuw nsw i64 %indvars.iv.next.i3, 1,
... !llvm.access.group !12
%exitcond.not.i = icmp eq i64 %indvars.iv.next.i, %wide.trip.count.i,
... !llvm.access.group !12
br i1 %exitcond.not.i, label %if.end.i.loopexit, label %for.body.i,
... !llvm.loop !34, !llvm.access.group !12
```

```
if.end.i.loopexit:
br label %if.end.i
```

```
if.end.i:
%87 = add nuw i64 %local_id_x.0, 1
%exitcond.not = icmp eq i64 %87, %umax
br i1 %exitcond.not, label %adi_kernel3.exit, label
... %region_for_entry.entry.i, !llvm.loop !35
```

```
adi_kernel3.exit:
ret void
```

CFG for ' _pocl_kernel_adi_kernel3' function