%mul.i.i = shl i64 %5, 8 %cmp288.i = icmp sgt i32 %3, 1, !llvm.access.group !12 %wide.trip.count.i = zext i32 %3 to i64 %9 = add nsw i32 %3, -2 br i1 %cmp288.i, label %pregion for entry.entry.i.us.preheader, label ... %adi kernel1.exit pregion for entry.entry.i.us.preheader: %scevgep13 = getelementptr float, float\* %2, i64 %wide.trip.count.i %scevgep18 = getelementptr float, float\* %1, i64 %wide.trip.count.i %10 = add nsw i64 %wide.trip.count.i, -2 %11 = trunc i64 %5 to i32 %12 = mul i32 %11, %3 %13 = shl i32 %12, 8%14 = trunc i64 %5 to i32 %15 = mul i32 %14, %3 %16 = shl i32 %15, 8 br label %pregion for entry.entry.i.us pregion for entry.entry.i.us: % local id x.0.us = phi i64 [ %52, %if.end.i.us ], [ 0, ]... %pregion for entry.entry.i.us.preheader ] %17 = trunc i64 % local id x.0.us to i32%18 = mul i 32 %17. %3%19 = add i32 %18, %16 %20 = sext i 32 % 19 to i 64%scevgep22 = getelementptr float, float\* %2, i64 %20 %scevgep23 = getelementptr float, float\* %1, i64 %20 %21 = trunc i 64 % local id x.0.us to i 32 $%22 = \text{mul i} 32 \% 2\overline{1}, \% 3$ %23 = add i32 %22, %13%add1.i.i.us = add nuw nsw i64 % local id x.0.us, %mul.i.i, ...!llvm.access.group!12 %conv.i.us = trunc i64 %add1.i.i.us to i32, !llvm.access.group !12 %cmp.i.us = icmp slt i32 %conv.i.us, %3, !llvm.access.group !12 br i1 %cmp.i.us, label %for.body.lver.check.i.us, label %if.end.i.us, ...!llvm.access.group!12 for.body.lver.check.i.us: %mul.i.us = mul i32 %conv.i.us, %3, !llvm.access.group !12 %24 = sext i32 %mul.i.us to i64, !llvm.access.group !12 %scevgep.i.us = getelementptr float, float\* %2, i64 %24, !llvm.access.group %25 = add nsw i64 %24, %wide.trip.count.i, !llvm.access.group !12 %scevgep92.i.us = getelementptr float, float\* %2, i64 %25, ...!llvm.access.group!12 %scevgep94.i.us = getelementptr float, float\* %1, i64 %24, .. !llvm.access.group !12 %scevgep96.i.us = getelementptr float, float\* %1, i64 %25, .. !llvm.access.group !12 %bound0.i.us = icmp ult float\* %scevgep.i.us, %scevgep96.i.us, ...!llvm.access.group!12 %bound1.i.us = icmp ult float\* %scevgep94.i.us, %scevgep92.i.us, ...!llvm.access.group!12 %found.conflict.i.us = and i1 %bound0.i.us, %bound1.i.us, !llvm.access.group .. !12 %26 = add i32 %9, %mul.i.us, !llvm.access.group !12 %27 = icmp slt i32 %26, %mul.i.us, !llvm.access.group !12 %lver.safe.i.us = or i1 %27, %found.conflict.i.us, !llvm.access.group !12 br i1 %lver.safe.i.us, label %for.body.lver.orig.lver.orig.i.us.lver.check, ... label %for.body.ph.i.us, !llvm.access.group !12 F for.body.lver.orig.lver.orig.i.us.lver.check: %sub.lver.orig.i.us = add i32 %mul.i.us, -1, !llvm.access.group !12 %bound0 = icmp ugt float\* %scevgep18, %2 %bound1 = icmp ugt float\* %scevgep13, %1 %found.conflict = and i1 %bound0, %bound1 for.body.ph.i.us: %33 = trunc i64 %10 to i32 %load\_initial.i.us = load float, float\* %scevgep.i.us, align 4, %34 = add i32 %23, %33 ...!llvm.access.group!12
%load\_initial102.i.us = load float, float\* %scevgep94.i.us, align 4, %35 = icmp slt i32 %34, %23 %36 = icmp ugt i64 %10, 4294967295 %37 = or i1 %35, %36 ...!llvm.access.group!12 br label %for.body.i.us, !llvm.access.group !12 %lver.safe = or i1 %found.conflict, %37 br i1 %lver.safe, label ... %for.body.lver.orig.lver.orig.i.us.lver.orig.preheader, label ... %for.body.lver.orig.lver.orig.i.us.ph for.body.i.us: %indvars.iv.next.i6.us = phi i64 [ %indvars.iv.next.i.us, %for.body.i.us ], ... [ 1, %for.body.ph.i.us ] %sub18.i4.us = phi float [ %sub18.i.us, %for.body.i.us ], [ ... %load\_initial.i.us, %for.body.ph.i.us ] %sub42.i2.us = phi float [ %sub42.i.us, %for.body.i.us ], [ ... %load\_initial102.i.us, %for.body.ph.i.us ] %28 = add nsw i64 %indvars.iv.next.i6.us, %24, !llvm.access.group !12 %arrayidx.i.us = getelementptr inbounds float, float\* %2, i64 %28, ...!llvm.access.group!12
%29 = load float, float\* %arrayidx.i.us, align 4,!tbaa!14, ..!llvm.access.group!12 %arrayidx11.i.us = getelementptr inbounds float, float\* %0, i64 %28, ...!llvm.access.group!12
%30 = load float, float\* %arrayidx11.i.us, align 4, !tbaa!14, ...!llvm.access.group!12
%mul12.i.us = fmul float %sub18.i4.us, %30,!llvm.access.group!12
%div.i.us = fdiv float %mul12.i.us, %sub42.i2.us,!fpmath!18, "...!llvm.access.group!12
%sub18.i.us = fsub float %29, %div.i.us, !llvm.access.group!12 for.body.lver.orig.lver.orig.i.us.ph: %load initial = load float, float\* %scevgep22, align 4 for.body.lver.orig.lver.orig.i.us.lver.orig.preheader: store float %sub18.i.us, float\* %arrayidx.i.us, align 4, !tbaa !14, %load initial24 = load float, float\* %scevgep23, align 4 br label %for.body.lver.orig.lver.orig.i.us.lver.orig ..!llvm.access.group!12 br label %for.body.lver.orig.lver.orig.i.us, !llvm.access.group !12 %arrayidx26.i.us = getelementptr inbounds float, float\* %1, i64 %28, . !llvm.access.group !12 %31 = load float, float\* %arrayidx26.i.us, align 4, !tbaa !14, . !llvm.access.group !12 %32 = load float, float\* %arrayidx11.i.us, align 4, !tbaa !14, ..!llvm.access.group!12 %mul35.i.us = fmul float %32, %32, !llvm.access.group !12 %div41.i.us = fdiv float %mul35.i.us, %sub42.i2.us, !fpmath !18, ...!llvm.access.group!12
%sub42.i.us = fsub float %31, %div41.i.us, !llvm.access.group!12 store float %sub42.i.us, float\* %arrayidx26.i.us, align 4, !tbaa !14, .. !llvm.access.group !12 %indvars.iv.next.i.us = add nuw nsw i64 %indvars.iv.next.i6.us, 1, ...!llvm.access.group!12 %exitcond.not.i.us = icmp eq i64 %indvars.iv.next.i.us, %wide.trip.count.i, ..!llvm.access.group!12 br i1 %exitcond.not.i.us, label %if.end.i.us.loopexit31, label .. %for.body.i.us, !llvm.loop !19, !llvm.access.group !12 for.body.lver.orig.lver.orig.i.us.lver.orig: %indvars.iv.next.lver.orig.lver.orig.i8.us.lver.orig = phi i64 [ ... %indvars.iv.next.lver.orig.lver.orig.i.us.lver.orig, ... %for.body.lver.orig.lver.orig.i.us.lver.orig ], [ 1, ... %for.body.lver.orig.lver.orig.i.us.lver.orig.preheader ] %38 = add nsw i64 %indvars.iv.next.lver.orig.lver.orig.i8.us.lver.orig, %24, ..!llvm.access.group!12 %arrayidx.lver.orig.lver.orig.i.us.lver.orig = getelementptr inbounds float, ... float\* %2, i64 %38, !llvm.access.group !12 for.body.lver.orig.lver.orig.i.us: %39 = load float, float\* %arrayidx.lver.orig.lver.orig.i.us.lver.orig, align %store\_forwarded25 = phi float [ %load\_initial24, ... %for.body.lver.orig.lver.orig.i.us.ph ], [ %sub42.lver.orig.lver.orig.i.us, ... %for.body.lver.orig.lver.orig.i.us ] ... 4, !tbaa !14, !llvm.access.group !12 %40 = trunc i64 %indvars.iv.next.lver.orig.lver.orig.i8.us.lver.orig to i32, %store forwarded = phi float [ %load initial, ...!llvm.access.group!12
%add5.lver.orig.lver.orig.i.us.lver.orig = add i32 %sub.lver.orig.i.us, %40, ... %for.body.lver.orig.lver.orig.i.us.ph ], [ %sub18.lver.orig.lver.orig.i.us, ...!llvm.access.group!12 .. %for.body.lver.orig.lver.orig.i.us ] %idxprom6.lver.orig.lver.orig.i.us.lver.orig = sext i32 ... %add5.lver.orig.lver.orig.i.us.lver.orig to i64, !llvm.access.group !12 %indvars.iv.next.lver.orig.lver.orig.i8.us = phi i64 [ 1, .. %for.body.lver.orig.lver.orig.i.us.ph ], [ ... %indvars.iv.next.lver.orig.lver.orig.i.us, %for.body.lver.orig.lver.orig.i.us %arrayidx7.lver.orig.lver.orig.i.us.lver.orig = getelementptr inbounds ... float, float\* %2, i64 %idxprom6.lver.orig.lver.orig.i.us.lver.orig, %47 = add nsw i64 %indvars.iv.next.lver.orig.lver.orig.i8.us, %24, ...!llvm.access.group!12 %41 = load float, float\* %arrayidx7.lver.orig.lver.orig.i.us.lver.orig, ..!llvm.access.group!12 %arrayidx.lver.orig.lver.orig.i.us = getelementptr inbounds float, float\* ... %2, i64 %47, !llvm.access.group !12 ... align 4, !tbaa !14, !llvm.access.group !12 %arrayidx11.lver.orig.lver.orig.i.us.lver.orig = getelementptr inbounds ... float, float\* %0, i64 %38, !llvm.access.group !12 %48 = load float, float\* %arrayidx.lver.orig.lver.orig.i.us, align 4, !tbaa %42 = load float, float\* %arrayidx11.lver.orig.lver.orig.i.us.lver.orig, ...!14,!llvm.access.group!12
%arrayidx11.lver.orig.lver.orig.i.us = getelementptr inbounds float, float\* ... align 4, !tbaa !14, !llvm.access.group !12 %mul12.lver.orig.lver.orig.i.us.lver.orig = fmul float %41, %42, .. %0, i64 %47, !llvm.access.group !12 %49 = load float, float\* %arrayidx11.lver.orig.lver.orig.i.us, align 4, ...!llvm.access.group!12 %arrayidx17.lver.orig.lver.orig.i.us.lver.orig = getelementptr inbounds ... float, float\* %1, i64 %idxprom6.lver.orig.lver.orig.i.us.lver.orig, ..!tbaa!14,!llvm.access.group!12 %mul12.lver.orig.lver.orig.i.us = fmul float %store forwarded, %49, ...!llvm.access.group!12 ..!llvm.access.group!12 %43 = load float, float\* %arrayidx17.lver.orig.lver.orig.i.us.lver.orig, %div.lver.orig.lver.orig.i.us = fdiv float %mul12.lver.orig.lver.orig.i.us, ... %store\_forwarded25, !fpmath !18, !llvm.access.group !12 ... align 4, !tbaa !14, !llvm.access.group !12 %sub18.lver.orig.lver.orig.i.us = fsub float %48, ... %div.lver.orig.lver.orig.i.us, !llvm.access.group !12 store float %sub18.lver.orig.lver.orig.i.us, float\* %div.lver.orig.lver.orig.i.us.lver.orig = fdiv float ... %mul12.lver.orig.lver.orig.i.us.lver.orig, %43, !fpmath !18, ...!llvm.access.group!12 %sub18.lver.orig.lver.orig.i.us.lver.orig = fsub float %39, ... %arrayidx.lver.orig.lver.orig.i.us, align 4, !tbaa !14, !llvm.access.group !12 %arrayidx26.lver.orig.lver.orig.i.us = getelementptr inbounds float, float\* ... %1, i64 %47, !llvm.access.group !12 ... %div.lver.orig.lver.orig.i.us.lver.orig, !llvm.access.group !12 store float %sub18.lver.orig.lver.orig.i.us.lver.orig, float %50 = load float, float\* %arrayidx26.lver.orig.lver.orig.i.us, align 4, ... %arrayidx.lver.orig.lver.orig.i.us.lver.orig, align 4, !tbaa !14, ...!llvm.access.group!12 ..!tbaa!14,!llvm.access.group!12 %arrayidx26.lver.orig.lver.orig.i.us.lver.orig = getelementptr inbounds ... float, float\* %1, i64 %38, !llvm.access.group !12 %51 = load float, float\* %arrayidx11.lver.orig.lver.orig.i.us, align 4, ..!tbaa!14,!llvm.access.group!12 %44 = load float, float\* %arrayidx26.lver.orig.lver.orig.i.us.lver.orig, %mul35.lver.orig.lver.orig.i.us = fmul float %51, %51, !llvm.access.group !12 ... align 4, !tbaa !14, !llvm.access.group !12 %div41.lver.orig.lver.orig.i.us = fdiv float %45 = load float, float\* %arrayidx11.lver.orig.lver.orig.i.us.lver.orig, ... %mul35.lver.orig.lver.orig.i.us, %store\_forwarded25, !fpmath !18, ..!llvm.access.group!12 ... align 4, !tbaa !14, !llvm.access.group !12 %mul35.lver.orig.lver.orig.i.us.lver.orig = fmul float %45, %45, %sub42.lver.orig.lver.orig.i.us = fsub float %50, .. %div41.lver.orig.lver.orig.i.us, !llvm.access.group !12 ...!llvm.access.group!12 %46 = load float, float\* %arrayidx17.lver.orig.lver.orig.i.us.lver.orig, store float %sub42.lver.orig.lver.orig.i.us, float\* ... align 4, !tbaa !14, !llvm.access.group !12 .. %arrayidx26.lver.orig.lver.orig.i.us, align 4, !tbaa !14, !llvm.access.group %div41.lver.orig.lver.orig.i.us.lver.orig = fdiv float ... !12 ... %mul35.lver.orig.lver.orig.i.us.lver.orig, %46, !fpmath !18, %indvars.iv.next.lver.orig.lver.orig.i.us = add nuw nsw i64 .. %indvars.iv.next.lver.orig.lver.orig.i8.us, 1, !llvm.access.group !12 ...!llvm.access.group!12 %sub42.lver.orig.lver.orig.i.us.lver.orig = fsub float %44, ... %div41.lver.orig.lver.orig.i.us.lver.orig, !llvm.access.group !12 %exitcond.not.lver.orig.lver.orig.i.us = icmp eq i64 .. %indvars.iv.next.lver.orig.lver.orig.i.us, %wide.trip.count.i, store float %sub42.lver.orig.lver.orig.i.us.lver.orig, float\* ...!llvm.access.group!12 ... %arrayidx26.lver.orig.lver.orig.i.us.lver.orig, align 4, !tbaa !14, ... !llvm.access.group !12 br i1 %exitcond.not.lver.orig.lver.orig.i.us, label %if.end.i.us.loopexit30, ... label %for.body.lver.orig.lver.orig.i.us, !llvm.loop !19, !llvm.access.group %indvars.iv.next.lver.orig.lver.orig.i.us.lver.orig = add nuw nsw i64 ... %indvars.iv.next.lver.orig.lver.orig.i8.us.lver.orig, 1, !llvm.access.group ... !12 ... !12 %exitcond.not.lver.orig.lver.orig.i.us.lver.orig = icmp eq i64 ... %indvars.iv.next.lver.orig.lver.orig.i.us.lver.orig, %wide.trip.count.i, ...!llvm.access.group!12 br i1 %exitcond.not.lver.orig.lver.orig.i.us.lver.orig, label ... %if.end.i.us.loopexit, label %for.body.lver.orig.lver.orig.i.us.lver.orig, ...!llvm.loop!19, !llvm.access.group!12 if.end.i.us.loopexit31: if.end.i.us.loopexit30: if.end.i.us.loopexit: br label %if.end.i.us br label %if.end.i.us br label %if.end.i.us if.end.i.us: %52 = add nuw nsw i64 % local id x.0.us, 1 %exitcond.not = icmp eq  $i\overline{6}4$  %5 $\overline{2}$ ,  $\overline{2}56$ br i1 %exitcond.not, label %adi kernel1.exit.loopexit, label ... %pregion for entry.entry.i.us, !llvm.loop!21 adi kernel1.exit.loopexit: br label %adi kernel1.exit adi kernel1.exit: ret void