

```
entry:
%upsample1 = getelementptr inbounds %struct.jpeg_decompress_struct,
... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 81
%0 = bitcast %struct.jpeg_upsampler** %upsample1 to %struct.my_upsampler**
%1 = load %struct.my_upsampler*, %struct.my_upsampler** %0, align 8, !tbaa !2
%sample_range_limit = getelementptr inbounds %struct.jpeg_decompress_struct,
... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 61
%2 = load i8*, i8** %sample_range_limit, align 8, !tbaa !10
%Cr_r_tab = getelementptr inbounds %struct.my_upsampler,
... %struct.my_upsampler* %1, i64 0, i32 2
%3 = load i32*, i32** %Cr_r_tab, align 8, !tbaa !11
%Cb_b_tab = getelementptr inbounds %struct.my_upsampler,
... %struct.my_upsampler* %1, i64 0, i32 3
%4 = load i32*, i32** %Cb_b_tab, align 8, !tbaa !14
%Cr_g_tab = getelementptr inbounds %struct.my_upsampler,
... %struct.my_upsampler* %1, i64 0, i32 4
%5 = load i64*, i64** %Cr_g_tab, align 8, !tbaa !15
%Cb_g_tab = getelementptr inbounds %struct.my_upsampler,
... %struct.my_upsampler* %1, i64 0, i32 5
%6 = load i64*, i64** %Cb_g_tab, align 8, !tbaa !16
%idxprom = zext i32 %in_row_group_ctr to i64
%7 = load i8**, i8*** %input_buf, align 8, !tbaa !17
%arrayidx2 = getelementptr inbounds i8*, i8** %7, i64 %idxprom
%8 = load i8*, i8** %arrayidx2, align 8, !tbaa !17
%arrayidx4 = getelementptr inbounds i8**, i8*** %input_buf, i64 1
%9 = load i8**, i8*** %arrayidx4, align 8, !tbaa !17
%arrayidx5 = getelementptr inbounds i8*, i8** %9, i64 %idxprom
%10 = load i8*, i8** %arrayidx5, align 8, !tbaa !17
%arrayidx7 = getelementptr inbounds i8**, i8*** %input_buf, i64 2
%11 = load i8**, i8*** %arrayidx7, align 8, !tbaa !17
%arrayidx8 = getelementptr inbounds i8*, i8** %11, i64 %idxprom
%12 = load i8*, i8** %arrayidx8, align 8, !tbaa !17
%13 = load i8*, i8** %output_buf, align 8, !tbaa !17
%output_width = getelementptr inbounds %struct.jpeg_decompress_struct,
... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 26
%14 = load i32, i32* %output_width, align 8, !tbaa !18
%shr = lshr i32 %14, 1
%cmp154 = icmp eq i32 %shr, 0
br i1 %cmp154, label %for.end, label %for.body.preheader
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for.body.preheader:
%15 = add nsw i32 %shr, -1
%16 = zext i32 %15 to i64
%17 = mul nuw nsw i64 %16, 6
%18 = add nuw nsw i64 %17, 6
%19 = shl nuw nsw i64 %16, 1
%20 = add nuw nsw i64 %19, 2
%21 = add nuw nsw i64 %16, 1
%scevgep164 = getelementptr i8, i8* %12, i64 %21
br label %for.body
```

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for.body:
%col.0159 = phi i32 [ %dec, %for.body ], [ %shr, %for.body.preheader ]
%inptr2.0158 = phi i8* [ %incdec.ptr10, %for.body ], [ %12,
... %for.body.preheader ]
%inptr1.0157 = phi i8* [ %incdec.ptr, %for.body ], [ %10,
... %for.body.preheader ]
%inptr0.0156 = phi i8* [ %incdec.ptr36, %for.body ], [ %8,
... %for.body.preheader ]
%outptr.0155 = phi i8* [ %add.ptr50, %for.body ], [ %13, %for.body.preheader
... ]
%incdec.ptr = getelementptr inbounds i8, i8* %inptr1.0157, i64 1
%22 = load i8, i8* %inptr1.0157, align 1, !tbaa !19
%incdec.ptr10 = getelementptr inbounds i8, i8* %inptr2.0158, i64 1
%23 = load i8, i8* %inptr2.0158, align 1, !tbaa !19
%idxprom12 = zext i8 %23 to i64
%arrayidx13 = getelementptr inbounds i32, i32* %3, i64 %idxprom12
%24 = load i32, i32* %arrayidx13, align 4, !tbaa !20
%idxprom14 = zext i8 %22 to i64
%arrayidx15 = getelementptr inbounds i64, i64* %6, i64 %idxprom14
%25 = load i64, i64* %arrayidx15, align 8, !tbaa !21
%arrayidx17 = getelementptr inbounds i64, i64* %5, i64 %idxprom12
%26 = load i64, i64* %arrayidx17, align 8, !tbaa !21
%add = add nsw i64 %26, %25
%shr18153 = lshr i64 %add, 16
%conv19 = trunc i64 %shr18153 to i32
%arrayidx21 = getelementptr inbounds i32, i32* %4, i64 %idxprom14
%27 = load i32, i32* %arrayidx21, align 4, !tbaa !20
%incdec.ptr22 = getelementptr inbounds i8, i8* %inptr0.0156, i64 1
%28 = load i8, i8* %inptr0.0156, align 1, !tbaa !19
%conv23 = zext i8 %28 to i32
%add24 = add nsw i32 %conv23, %24
%idxprom25 = sext i32 %add24 to i64
%arrayidx26 = getelementptr inbounds i8, i8* %2, i64 %idxprom25
%29 = load i8, i8* %arrayidx26, align 1, !tbaa !19
store i8 %29, i8* %outptr.0155, align 1, !tbaa !19
%add28 = add nsw i32 %conv23, %conv19
%idxprom29 = sext i32 %add28 to i64
%arrayidx30 = getelementptr inbounds i8, i8* %2, i64 %idxprom29
%30 = load i8, i8* %arrayidx30, align 1, !tbaa !19
%arrayidx31 = getelementptr inbounds i8, i8* %outptr.0155, i64 1
store i8 %30, i8* %arrayidx31, align 1, !tbaa !19
%add32 = add nsw i32 %conv23, %27
%idxprom33 = sext i32 %add32 to i64
%arrayidx34 = getelementptr inbounds i8, i8* %2, i64 %idxprom33
%31 = load i8, i8* %arrayidx34, align 1, !tbaa !19
%arrayidx35 = getelementptr inbounds i8, i8* %outptr.0155, i64 2
store i8 %31, i8* %arrayidx35, align 1, !tbaa !19
%add.ptr = getelementptr inbounds i8, i8* %outptr.0155, i64 3
%incdec.ptr36 = getelementptr inbounds i8, i8* %inptr0.0156, i64 2
%32 = load i8, i8* %incdec.ptr22, align 1, !tbaa !19
%conv37 = zext i8 %32 to i32
%add38 = add nsw i32 %conv37, %24
%idxprom39 = sext i32 %add38 to i64
%arrayidx40 = getelementptr inbounds i8, i8* %2, i64 %idxprom39
%33 = load i8, i8* %arrayidx40, align 1, !tbaa !19
store i8 %33, i8* %add.ptr, align 1, !tbaa !19
%add42 = add nsw i32 %conv37, %conv19
%idxprom43 = sext i32 %add42 to i64
%arrayidx44 = getelementptr inbounds i8, i8* %2, i64 %idxprom43
%34 = load i8, i8* %arrayidx44, align 1, !tbaa !19
%arrayidx45 = getelementptr inbounds i8, i8* %outptr.0155, i64 4
store i8 %34, i8* %arrayidx45, align 1, !tbaa !19
%add46 = add nsw i32 %conv37, %27
%idxprom47 = sext i32 %add46 to i64
%arrayidx48 = getelementptr inbounds i8, i8* %2, i64 %idxprom47
%35 = load i8, i8* %arrayidx48, align 1, !tbaa !19
%arrayidx49 = getelementptr inbounds i8, i8* %outptr.0155, i64 5
store i8 %35, i8* %arrayidx49, align 1, !tbaa !19
%add.ptr50 = getelementptr inbounds i8, i8* %outptr.0155, i64 6
%dec = add i32 %col.0159, -1
%cmp = icmp eq i32 %dec, 0
br i1 %cmp, label %for.end.loopexit, label %for.body
```

```
for.end.loopexit:
%scevgep = getelementptr i8, i8* %13, i64 %18
%scevgep163 = getelementptr i8, i8* %8, i64 %20
%scevgep165 = getelementptr i8, i8* %10, i64 %21
%.pre = load i32, i32* %output_width, align 8, !tbaa !18
br label %for.end
```

```
for.end:
%36 = phi i32 [ %14, %entry ], [ %.pre, %for.end.loopexit ]
%inptr2.0.lcssa = phi i8* [ %12, %entry ], [ %scevgep164, %for.end.loopexit ]
%inptr1.0.lcssa = phi i8* [ %10, %entry ], [ %scevgep165, %for.end.loopexit ]
%inptr0.0.lcssa = phi i8* [ %8, %entry ], [ %scevgep163, %for.end.loopexit ]
%outptr.0.lcssa = phi i8* [ %13, %entry ], [ %scevgep, %for.end.loopexit ]
%and = and i32 %36, 1
%tobool = icmp eq i32 %and, 0
br i1 %tobool, label %if.end, label %if.then
```

```
if.then:
%37 = load i8, i8* %inptr1.0.lcssa, align 1, !tbaa !19
%38 = load i8, i8* %inptr2.0.lcssa, align 1, !tbaa !19
%idxprom54 = zext i8 %38 to i64
%arrayidx55 = getelementptr inbounds i32, i32* %3, i64 %idxprom54
%39 = load i32, i32* %arrayidx55, align 4, !tbaa !20
%idxprom56 = zext i8 %37 to i64
%arrayidx57 = getelementptr inbounds i64, i64* %6, i64 %idxprom56
%40 = load i64, i64* %arrayidx57, align 8, !tbaa !21
%arrayidx59 = getelementptr inbounds i64, i64* %5, i64 %idxprom54
%41 = load i64, i64* %arrayidx59, align 8, !tbaa !21
%add60 = add nsw i64 %41, %40
%shr61152 = lshr i64 %add60, 16
%conv62 = trunc i64 %shr61152 to i32
%arrayidx64 = getelementptr inbounds i32, i32* %4, i64 %idxprom56
%42 = load i32, i32* %arrayidx64, align 4, !tbaa !20
%43 = load i8, i8* %inptr0.0.lcssa, align 1, !tbaa !19
%conv65 = zext i8 %43 to i32
%add66 = add nsw i32 %conv65, %39
%idxprom67 = sext i32 %add66 to i64
%arrayidx68 = getelementptr inbounds i8, i8* %2, i64 %idxprom67
%44 = load i8, i8* %arrayidx68, align 1, !tbaa !19
store i8 %44, i8* %outptr.0.lcssa, align 1, !tbaa !19
%add70 = add nsw i32 %conv65, %conv62
%idxprom71 = sext i32 %add70 to i64
%arrayidx72 = getelementptr inbounds i8, i8* %2, i64 %idxprom71
%45 = load i8, i8* %arrayidx72, align 1, !tbaa !19
%arrayidx73 = getelementptr inbounds i8, i8* %outptr.0.lcssa, i64 1
store i8 %45, i8* %arrayidx73, align 1, !tbaa !19
%add74 = add nsw i32 %conv65, %42
%idxprom75 = sext i32 %add74 to i64
%arrayidx76 = getelementptr inbounds i8, i8* %2, i64 %idxprom75
%46 = load i8, i8* %arrayidx76, align 1, !tbaa !19
%arrayidx77 = getelementptr inbounds i8, i8* %outptr.0.lcssa, i64 2
store i8 %46, i8* %arrayidx77, align 1, !tbaa !19
br label %if.end
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```
if.end:
ret void
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CFG for 'h2v1\_merged\_upsample' function