

```
entry:
%rescale1 = getelementptr inbounds %struct.cjpeg_source_struct,
... %struct.cjpeg_source_struct* %sinfo, i64 1, i32 3
%0 = bitcast %struct._IO_FILE** %rescale1 to i8**
%1 = load i8*, i8** %0, align 8, !tbaa !3
%iobuffer = getelementptr inbounds %struct.cjpeg_source_struct,
... %struct.cjpeg_source_struct* %sinfo, i64 1
%2 = bitcast %struct.cjpeg_source_struct* %iobuffer to i8**
%3 = load i8*, i8** %2, align 8, !tbaa !11
%buffer_width = getelementptr inbounds %struct.cjpeg_source_struct,
... %struct.cjpeg_source_struct* %sinfo, i64 1, i32 2
%4 = bitcast void (%struct.jpeg_compress_struct*,
... %struct.cjpeg_source_struct*)** %buffer_width to i64*
%5 = load i64, i64* %4, align 8, !tbaa !12
%input_file = getelementptr inbounds %struct.cjpeg_source_struct,
... %struct.cjpeg_source_struct* %sinfo, i64 0, i32 3
%6 = load %struct._IO_FILE*, %struct._IO_FILE** %input_file, align 8, !tbaa
... !13
%call = tail call i64 @fread(i8* %3, i64 1, i64 %5, %struct._IO_FILE* %6)
%7 = load i64, i64* %4, align 8, !tbaa !12
%cmp = icmp eq i64 %call, %7
br i1 %cmp, label %if.end, label %if.then
```

```
if.then:
%err = getelementptr inbounds %struct.jpeg_compress_struct,
... %struct.jpeg_compress_struct* %cinfo, i64 0, i32 0
%8 = load %struct.jpeg_error_mgr*, %struct.jpeg_error_mgr** %err, align 8,
... !tbaa !14
%msg_code = getelementptr inbounds %struct.jpeg_error_mgr,
... %struct.jpeg_error_mgr* %8, i64 0, i32 5
store i32 42, i32* %msg_code, align 8, !tbaa !18
%error_exit = getelementptr inbounds %struct.jpeg_error_mgr,
... %struct.jpeg_error_mgr* %8, i64 0, i32 0
%9 = load void (%struct.jpeg_common_struct*)*, void
... (%struct.jpeg_common_struct*)** %error_exit, align 8, !tbaa !20
%10 = bitcast %struct.jpeg_compress_struct* %cinfo to
... %struct.jpeg_common_struct*
tail call void %9(%struct.jpeg_common_struct* %10) #3
br label %if.end
```

```
if.end:
%image_width = getelementptr inbounds %struct.jpeg_compress_struct,
... %struct.jpeg_compress_struct* %cinfo, i64 0, i32 6
%11 = load i32, i32* %image_width, align 8, !tbaa !21
%cmp624 = icmp eq i32 %11, 0
br i1 %cmp624, label %for.end, label %for.body.preheader
```

```
for.body.preheader:
%12 = load i8*, i8** %2, align 8, !tbaa !11
%buffer = getelementptr inbounds %struct.cjpeg_source_struct,
... %struct.cjpeg_source_struct* %sinfo, i64 0, i32 4
%13 = load i8**, i8*** %buffer, align 8, !tbaa !22
%14 = load i8*, i8** %13, align 8, !tbaa !23
%15 = add i32 %11, -1
%xtraiter = and i32 %11, 3
%lcmp.mod = icmp eq i32 %xtraiter, 0
br i1 %lcmp.mod, label %for.body.preheader.split, label
... %for.body.prol.preheader
```

```
for.body.prol.preheader:
br label %for.body.prol
```

```
for.body.prol:
%col.027.prol = phi i32 [ %dec.prol, %for.body.prol ], [ %11,
... %for.body.prol.preheader ]
%ptr.026.prol = phi i8* [ %incdec.ptr8.prol, %for.body.prol ], [ %14,
... %for.body.prol.preheader ]
%bufferptr.025.prol = phi i8* [ %incdec.ptr.prol, %for.body.prol ], [ %12,
... %for.body.prol.preheader ]
%prol.iter = phi i32 [ %prol.iter.sub, %for.body.prol ], [ %xtraiter,
... %for.body.prol.preheader ]
%incdec.ptr.prol = getelementptr inbounds i8, i8* %bufferptr.025.prol, i64 1
%16 = load i8, i8* %bufferptr.025.prol, align 1, !tbaa !24
%idxprom.prol = zext i8 %16 to i64
%arrayidx7.prol = getelementptr inbounds i8, i8* %1, i64 %idxprom.prol
%17 = load i8, i8* %arrayidx7.prol, align 1, !tbaa !24
%incdec.ptr8.prol = getelementptr inbounds i8, i8* %ptr.026.prol, i64 1
store i8 %17, i8* %ptr.026.prol, align 1, !tbaa !24
%dec.prol = add i32 %col.027.prol, -1
%prol.iter.sub = add i32 %prol.iter, -1
%prol.iter.cmp = icmp eq i32 %prol.iter.sub, 0
br i1 %prol.iter.cmp, label %for.body.preheader.split.loopexit, label
... %for.body.prol, !llvm.loop !25
```

```
for.body.preheader.split.loopexit:
%dec.prol.lcssa = phi i32 [ %dec.prol, %for.body.prol ]
%incdec.ptr8.prol.lcssa = phi i8* [ %incdec.ptr8.prol, %for.body.prol ]
%incdec.ptr.prol.lcssa = phi i8* [ %incdec.ptr.prol, %for.body.prol ]
br label %for.body.preheader.split
```

```
for.body.preheader.split:
%col.027.unr = phi i32 [ %11, %for.body.preheader ], [ %dec.prol.lcssa,
... %for.body.preheader.split.loopexit ]
%ptr.026.unr = phi i8* [ %14, %for.body.preheader ], [
... %incdec.ptr8.prol.lcssa, %for.body.preheader.split.loopexit ]
%bufferptr.025.unr = phi i8* [ %12, %for.body.preheader ], [
... %incdec.ptr.prol.lcssa, %for.body.preheader.split.loopexit ]
%18 = icmp ult i32 %15, 3
br i1 %18, label %for.end.loopexit, label %for.body.preheader.split.split
```

```
for.body.preheader.split.split:
br label %for.body
```

```
for.body:
%col.027 = phi i32 [ %col.027.unr, %for.body.preheader.split.split ], [
... %dec.3, %for.body ]
%ptr.026 = phi i8* [ %ptr.026.unr, %for.body.preheader.split.split ], [
... %incdec.ptr8.3, %for.body ]
%bufferptr.025 = phi i8* [ %bufferptr.025.unr,
... %for.body.preheader.split.split ], [ %incdec.ptr.3, %for.body ]
%incdec.ptr = getelementptr inbounds i8, i8* %bufferptr.025, i64 1
%19 = load i8, i8* %bufferptr.025, align 1, !tbaa !24
%idxprom = zext i8 %19 to i64
%arrayidx7 = getelementptr inbounds i8, i8* %1, i64 %idxprom
%20 = load i8, i8* %arrayidx7, align 1, !tbaa !24
%incdec.ptr8 = getelementptr inbounds i8, i8* %ptr.026, i64 1
store i8 %20, i8* %ptr.026, align 1, !tbaa !24
%incdec.ptr.1 = getelementptr inbounds i8, i8* %bufferptr.025, i64 2
%21 = load i8, i8* %incdec.ptr, align 1, !tbaa !24
%idxprom.1 = zext i8 %21 to i64
%arrayidx7.1 = getelementptr inbounds i8, i8* %1, i64 %idxprom.1
%22 = load i8, i8* %arrayidx7.1, align 1, !tbaa !24
%incdec.ptr8.1 = getelementptr inbounds i8, i8* %ptr.026, i64 2
store i8 %22, i8* %incdec.ptr8, align 1, !tbaa !24
%incdec.ptr.2 = getelementptr inbounds i8, i8* %bufferptr.025, i64 3
%23 = load i8, i8* %incdec.ptr.1, align 1, !tbaa !24
%idxprom.2 = zext i8 %23 to i64
%arrayidx7.2 = getelementptr inbounds i8, i8* %1, i64 %idxprom.2
%24 = load i8, i8* %arrayidx7.2, align 1, !tbaa !24
%incdec.ptr8.2 = getelementptr inbounds i8, i8* %ptr.026, i64 3
store i8 %24, i8* %incdec.ptr8.1, align 1, !tbaa !24
%incdec.ptr.3 = getelementptr inbounds i8, i8* %bufferptr.025, i64 4
%25 = load i8, i8* %incdec.ptr.2, align 1, !tbaa !24
%idxprom.3 = zext i8 %25 to i64
%arrayidx7.3 = getelementptr inbounds i8, i8* %1, i64 %idxprom.3
%26 = load i8, i8* %arrayidx7.3, align 1, !tbaa !24
%incdec.ptr8.3 = getelementptr inbounds i8, i8* %ptr.026, i64 4
store i8 %26, i8* %incdec.ptr8.2, align 1, !tbaa !24
%dec.3 = add i32 %col.027, -4
%cmp6.3 = icmp eq i32 %dec.3, 0
br i1 %cmp6.3, label %for.end.loopexit.unr.lcssa, label %for.body
```

```
for.end.loopexit.unr.lcssa:
br label %for.end.loopexit
```

```
for.end.loopexit:
br label %for.end
```

```
for.end:
ret i32 1
```