

```
entry:
  %dct1 = getelementptr @inbounds %struct.jpeg_decompress_struct,
    %struct.jpeg_decompress_struct* %cinfo, #64, i32 42
  %0 = bitcast %struct.jpeg_inverse_dct* to
    ...struct.my_dct_controller*
  %1 = load %struct.my_dct_controller*, %struct.my_dct_controller** %0,
    ... align 8, !tbaa.12
  %num_components = getelementptr @inbounds %struct.jpeg_decompress_struct,
    %struct.jpeg_decompress_struct* %cinfo, #64, i32 8
  %2 = load i32, i32* %num_components, align 8, !tbaa.10
  %cmp161 = icmp sgt i32 %2, 0
  br i1 %cmp161, label %for.body.lr.ph, label %for.endp3
```

```
for.body.lr.ph:
  %comp_info = getelementptr @inbounds %struct.jpeg_decompress_struct,
    %struct.jpeg_decompress_struct* %cinfo, #64, i32 42
  %3 = load %struct.jpeg_component_info*, %struct.jpeg_component_info**
    %comp_info, align 8, !tbaa.11
  %ent10 = getelementptr @inbounds %struct.jpeg_decompress_struct,
    %struct.jpeg_decompress_struct* %cinfo, #64, i32 0
  %4 = bitcast %struct.jpeg_decompress_struct* to
    %struct.jpeg_common_struct*
  %dct_method = getelementptr @inbounds %struct.jpeg_decompress_struct,
    ...struct.jpeg_decompress_struct* %cinfo, #64, i32 16
  br label %for.body
```

```
for.body:
  %ndvars.iv181 = phi i64 [ 0, %for.body.lr.ph ], [ %ndvars.iv.next182,
    ... %for.mc91 ]
  %cmptr0164 = phi %struct.jpeg_component_info* [ %3, %for.body.lr.ph ], [
    ... %ndec.ptr, %for.mc91 ]
  %method0163 = phi i32 [ 0, %for.body.lr.ph ], [ %method.1, %for.mc91 ]
  %method_ptr0162 = phi void (%struct.jpeg_decompress_struct,
    ...struct.jpeg_component_info*, i16*, i8**, i32*) [ null, %for.body.lr.ph ], [
    ... %method_ptr.1, %for.mc91 ]
  %DCT_scaled_size = getelementptr @inbounds %struct.jpeg_component_info,
    %struct.jpeg_component_info* %cmptr0164, #64, i32 9
  %5 = load i32, i32* %DCT_scaled_size, align 4, !tbaa.12
  switch i32 %5, label %sw.default9
  122: label %sw.epilog17
  132: label %sw.b02
  132: label %sw.b03
  132: label %sw.b04
```

def	1	2	4	8

```
sw.b02:
br label %sw.epilog17
```

```
sw.b03:
br label %sw.epilog17
```

```
sw.b04:
  %6 = load i32, i32* %dct_method, align 8, !tbaa.11
  %7 = icmp ult i32 %6, 3
  br i1 %7, label %switch.lookup, label %sw.default
```

```
switch.lookup:
  %12 = sxti i32 %6 to i64
  %switch_ptr = getelementptr @inbounds [3 x void]
    (%struct.jpeg_decompress_struct*, %struct.jpeg_component_info*, i16*, i8**,
    i32*) [ 1, 3, void (%struct.jpeg_decompress_struct*,
    %struct.jpeg_component_info*, i16*, i8**, i32*) ], @switch.table, i64 0, i64
    6, i64
  %switch.load = load void (%struct.jpeg_decompress_struct*,
    %struct.jpeg_component_info*, i16*, i8**, i32*), void
    (%struct.jpeg_decompress_struct*, %struct.jpeg_component_info*, i16*, i8**,
    i32**) %switch_ptr, align 8
  br label %sw.epilog17
```

```
%sw.default:
  %8 = load %struct.jpeg_error_mgr*, %struct.jpeg_error_mgr** %ent10, align 8,
    !tbaa.115
  %msg_code = getelementptr @inbounds %struct.jpeg_error_mgr,
    %struct.jpeg_error_mgr* %8, #64, i32 5
  store i32 47, i32* %msg_code, align 8, !tbaa.116
  %error_exit = getelementptr @inbounds %struct.jpeg_error_mgr,
    %struct.jpeg_error_mgr* %8, #64, i32 0
  %9 = load void (%struct.jpeg_common_struct)*, void
    (%struct.jpeg_common_struct**) %error_exit, align 8, !tbaa.119
  tail call void @fprintf(%struct.jpeg_common_struct* %a0, %4) #3
  br label %sw.epilog17
```

```
sw.epilog17:
  %method_ptr.1 = phi void (%struct.jpeg_decompress_struct,
    ...struct.jpeg_component_info*, i16*, i8**, i32*) [ %method_ptr0162,
    ... %sw.default9 ], [ %method_ptr0162, %sw.default ], [ @jpeg_dct_14, %sw.b02
    ... ], [ @jpeg_dct_14, %sw.b02 ], [ @jpeg_dct_14, %for.body ], [ ]
  %switch.load, %switch.lookup
  %method.1 = phi i32 [ %method0163, %sw.default9 ], [ %method0163,
    ... %sw.default ], [ 0, %sw.b02 ], [ 0, %for.body ], [ %5,
    ... %switch.lookup ]
  %arrays18 = getelementptr @inbounds %struct.my_dct_controller,
    %struct.my_dct_controller* %4, #64, i32 0, i32 1, i64 %ndvars.iv181
  store void (%struct.jpeg_decompress_struct*, %struct.jpeg_component_info*,
    ...i16*, i8**, i32*) %method_ptr.1, void (%struct.jpeg_decompress_struct*,
    ...struct.jpeg_component_info*, i16*, i8**, i32**) %arrays18, align 8, !tbaa
    121
  %component_needed = getelementptr @inbounds %struct.jpeg_component_info,
    %struct.jpeg_component_info* %cmptr0164, #64, i32 12
  %13 = load i32, i32* %component_needed, align 8, !tbaa.12
  %tobool = icmp eq i32 %13, 0
  br i1 %tobool, label %for.mc91, label %for.this.false
```

```
for.this.false:
  %arrays20 = getelementptr @inbounds %struct.my_dct_controller,
    %struct.my_dct_controller* %4, #64, i32 1, i64 %ndvars.iv181
  %14 = load i32, i32* %arrays20, align 4, !tbaa.120
  %cmp21 = icmp eq i32 %14, %method.1
  br i1 %cmp21, label %for.mc91, label %if.end
```

```
if.end:
  %quant_table = getelementptr @inbounds %struct.jpeg_component_info,
    %struct.jpeg_component_info* %cmptr0164, #64, i32 19
  %15 = load %struct.JQUANT_TBL*, %struct.JQUANT_TBL** %quant_table, align 8,
    !tbaa.121
  %cmp22 = icmp eq %struct.JQUANT_TBL* %15, null
  br i1 %cmp22, label %for.mc91, label %if.end24
```

def	0	1	4

```
if.end24:
store i32 %method.1, i32* %arrays20, align 4, !tbaa.120
switch i32 %method.1, label %sw.default85
132: label %sw.b02b
132: label %sw.b02b
132: label %sw.b02b
132: label %sw.b02b
```

def	0	1	4

```
sw.b02b:
  %dct_table = getelementptr @inbounds %struct.jpeg_component_info,
    ...struct.jpeg_component_info* %cmptr0164, #64, i32 20
  %17 = load i32*, i32** %16, align 8, !tbaa.124
  br label %vector.body
```

```
sw.b03b:
  %dct_table56 = getelementptr @inbounds %struct.jpeg_component_info,
    ...struct.jpeg_component_info* %cmptr0164, #64, i32 20
  %97 = load i32*, i32** %96, align 8, !tbaa.124
  br label %vector.body187
```

```
sw.b05:
  %dct_table56 = getelementptr @inbounds %struct.jpeg_component_info,
    ...struct.jpeg_component_info* %cmptr0164, #64, i32 20
  %124 = load float*, float** %123, align 8, !tbaa.124
  br label %for.cond01.preheader
```

```
vector.body:
  %18 = bitcast %struct.JQUANT_TBL* %15 to <4 x i16**>
  %swide.load = load <4 x i16**, <4 x i16**> %18, align 2, !tbaa.125
  %19 = zext <4 x i16** %wide.load.0 to <4 x i32>
  %20 = bitcast i32** %19 to <4 x i32**>
  store <4 x i32** %19, <4 x i32**> %20, align 4, !tbaa.120
  %21 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 4
  %22 = bitcast i16** %21 to <4 x i16**>
  %swide.load.1 = load <4 x i16**, <4 x i16**> %22, align 2, !tbaa.125
  %23 = zext <4 x i16** %wide.load.1 to <4 x i32>
  %24 = getelementptr @inbounds i32, i32** %17, i64 4
  %25 = bitcast i32** %24 to <4 x i32**>
  store <4 x i32** %23, <4 x i32**> %25, align 4, !tbaa.120
  %26 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 8
  %27 = bitcast i16** %26 to <4 x i16**>
  %swide.load.2 = load <4 x i16**, <4 x i16**> %27, align 2, !tbaa.125
  %28 = zext <4 x i16** %wide.load.2 to <4 x i32>
  %29 = getelementptr @inbounds i32, i32** %17, i64 8
  %30 = bitcast i32** %29 to <4 x i32**>
  store <4 x i32** %28, <4 x i32**> %30, align 4, !tbaa.120
  %31 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 1
  %32 = bitcast i16** %31 to <4 x i16**>
  %wide.load.3 = load <4 x i16**, <4 x i16**> %32, align 2, !tbaa.125
  %33 = zext <4 x i16** %wide.load.3 to <4 x i32>
  %34 = getelementptr @inbounds i32, i32** %17, i64 12
  %35 = bitcast i32** %34 to <4 x i32**>
  store <4 x i32** %33, <4 x i32**> %35, align 4, !tbaa.120
  %36 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 16
  %37 = bitcast i16** %36 to <4 x i16**>
  %swide.load.4 = load <4 x i16**, <4 x i16**> %37, align 2, !tbaa.125
  %38 = zext <4 x i16** %wide.load.4 to <4 x i32>
  %39 = getelementptr @inbounds i32, i32** %17, i64 16
  %40 = bitcast i32** %39 to <4 x i32**>
  store <4 x i32** %38, <4 x i32**> %40, align 4, !tbaa.120
  %41 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 20
  %42 = bitcast i16** %41 to <4 x i16**>
  %wide.load.5 = load <4 x i16**, <4 x i16**> %42, align 2, !tbaa.125
  %43 = zext <4 x i16** %wide.load.5 to <4 x i32>
  %44 = getelementptr @inbounds i32, i32** %17, i64 20
  %45 = bitcast i32** %44 to <4 x i32**>
  store <4 x i32** %43, <4 x i32**> %45, align 4, !tbaa.120
  %46 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 24
  %47 = bitcast i16** %46 to <4 x i16**>
  %swide.load.6 = load <4 x i16**, <4 x i16**> %47, align 2, !tbaa.125
  %48 = zext <4 x i16** %wide.load.6 to <4 x i32>
  %49 = getelementptr @inbounds i32, i32** %17, i64 24
  %50 = bitcast i32** %49 to <4 x i32**>
  store <4 x i32** %48, <4 x i32**> %50, align 4, !tbaa.120
  %51 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 28
  %52 = bitcast i16** %51 to <4 x i16**>
  %wide.load.7 = load <4 x i16**, <4 x i16**> %52, align 2, !tbaa.125
  %53 = zext <4 x i16** %wide.load.7 to <4 x i32>
  %54 = getelementptr @inbounds i32, i32** %17, i64 28
  %55 = bitcast i32** %54 to <4 x i32**>
  store <4 x i32** %53, <4 x i32**> %55, align 4, !tbaa.120
  %56 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 32
  %57 = bitcast i16** %56 to <4 x i16**>
  %swide.load.8 = load <4 x i16**, <4 x i16**> %57, align 2, !tbaa.125
  %58 = zext <4 x i16** %wide.load.8 to <4 x i32>
  %59 = getelementptr @inbounds i32, i32** %17, i64 32
  %60 = bitcast i32** %59 to <4 x i32**>
  store <4 x i32** %58, <4 x i32**> %60, align 4, !tbaa.120
  %61 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 36
  %62 = bitcast i16** %61 to <4 x i16**>
  %wide.load.9 = load <4 x i16**, <4 x i16**> %62, align 2, !tbaa.125
  %63 = zext <4 x i16** %wide.load.9 to <4 x i32>
  %64 = getelementptr @inbounds i32, i32** %17, i64 36
  %65 = bitcast i32** %64 to <4 x i32**>
  store <4 x i32** %63, <4 x i32**> %65, align 4, !tbaa.120
  %66 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 40
  %67 = bitcast i16** %66 to <4 x i16**>
  %swide.load.10 = load <4 x i16**, <4 x i16**> %67, align 2, !tbaa.125
  %68 = zext <4 x i16** %wide.load.10 to <4 x i32>
  %69 = getelementptr @inbounds i32, i32** %17, i64 40
  %70 = bitcast i32** %69 to <4 x i32**>
  store <4 x i32** %68, <4 x i32**> %70, align 4, !tbaa.120
  %71 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 44
  %72 = bitcast i16** %71 to <4 x i16**>
  %wide.load.11 = load <4 x i16**, <4 x i16**> %72, align 2, !tbaa.125
  %73 = zext <4 x i16** %wide.load.11 to <4 x i32>
  %74 = getelementptr @inbounds i32, i32** %17, i64 44
  %75 = bitcast i32** %74 to <4 x i32**>
  store <4 x i32** %73, <4 x i32**> %75, align 4, !tbaa.120
  %76 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 48
  %77 = bitcast i16** %76 to <4 x i16**>
  %swide.load.12 = load <4 x i16**, <4 x i16**> %77, align 2, !tbaa.125
  %78 = zext <4 x i16** %wide.load.12 to <4 x i32>
  %79 = getelementptr @inbounds i32, i32** %17, i64 48
  %80 = bitcast i32** %79 to <4 x i32**>
  store <4 x i32** %78, <4 x i32**> %80, align 4, !tbaa.120
  %81 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 52
  %82 = bitcast i16** %81 to <4 x i16**>
  %swide.load.13 = load <4 x i16**, <4 x i16**> %82, align 2, !tbaa.125
  %83 = zext <4 x i16** %wide.load.13 to <4 x i32>
  %84 = getelementptr @inbounds i32, i32** %17, i64 52
  %85 = bitcast i32** %84 to <4 x i32**>
  store <4 x i32** %83, <4 x i32**> %85, align 4, !tbaa.120
  %86 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 56
  %87 = bitcast i16** %86 to <4 x i16**>
  %wide.load.14 = load <4 x i16**, <4 x i16**> %87, align 2, !tbaa.125
  %88 = zext <4 x i16** %wide.load.14 to <4 x i32>
  %89 = getelementptr @inbounds i32, i32** %17, i64 56
  %90 = bitcast i32** %89 to <4 x i32**>
  store <4 x i32** %88, <4 x i32**> %90, align 4, !tbaa.120
  %91 = getelementptr @inbounds %struct.JQUANT_TBL*, %struct.JQUANT_TBL* %15,
    #64, i32 0, i64 60
  %92 = bitcast i16** %91 to <4 x i16**>
  %swide.load.15 = load <4 x i16**, <4 x i16**> %92, align 2, !tbaa.125
  %93 = zext <4 x i16** %wide.load.15 to <4 x i32>
  %94 = getelementptr @inbounds i32, i32** %17, i64 60
  %95 = bitcast i32** %94 to <4 x i32**>
  store <4 x i32** %93, <4 x i32**> %95, align 4, !tbaa.120
  br label %for.mc91
```

```
sw.default85:
  %134 = load %struct.jpeg_error_mgr*, %struct.jpeg_error_mgr** %ent10, align
    8, !tbaa.115
  %msg_code87 = getelementptr @inbounds %struct.jpeg_error_mgr,
    %struct.jpeg_error_mgr* %134, #64, i32 5
  store i32 47, i32* %msg_code87, align 8, !tbaa.116
  %error_exit89 = getelementptr @inbounds %struct.jpeg_error_mgr,
    %struct.jpeg_error_mgr* %134, #64, i32 0
  %135 = load void (%struct.jpeg_common_struct)*, void
    (%struct.jpeg_common_struct**) %error_exit89, align 8, !tbaa.119
  tail call void @fprintf(%struct.jpeg_common_struct* %a0, %4) #3
  br label %for.mc91
```

```
for.mc91:
  %ndvars.iv.next182 = add nsw new i64 %ndvars.iv181, 1
  %ndec.ptr = getelementptr @inbounds %struct.jpeg_component_info,
    %struct.jpeg_component_info* %cmptr0164, #64, i32 1
  %136 = load i32, i32* %num_components, align 8, !tbaa.110
  %137 = sext i32 %136 to i64
  %cmp = icmp slt i64 %ndvars.iv.next182, %137
  br i1 %cmp, label %for.body, label %for.endp3.loopexit
```

```
for.mc91.loopexit201:
br label %for.mc91
```

```
for.mc91.loopexit202:
br label %for.mc91
```

```
for.endp3.loopexit:
br label %for.endp3
```

```
for.endp3:
ret void
```