

```
entry:
  %master1 = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 73
  %0 = bitcast %struct.jpeg_decomp_master** %master1 to
  ... %struct.my_decomp_master**
  %1 = load %struct.my_decomp_master*, %struct.my_decomp_master** %0, align 8,
  ... !tbaa.12
  %is_dummy_pass = getelementptr inbounds %struct.my_decomp_master,
  ... %struct.my_decomp_master* %1, i64 0, i32 0, i32 2
  %2 = load i32, i32* %is_dummy_pass, align 8, !tbaa.110
  %tobool = icmp eq i32 %2, 0
  br i1 %tobool, label %if.else, label %if.then
```

```
if.else:
  %quantize_colors = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 19
  %9 = load i32, i32* %quantize_colors, align 4, !tbaa.122
  %tobool6 = icmp eq i32 %9, 0
  br i1 %tobool6, label %if.end22, label %land.lhs.true
```

```
land.lhs.true:
  %colormap = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 32
  %10 = load i8**, i8** %colormap, align 8, !tbaa.123
  %tobool8 = icmp eq i8** %10, null
  br i1 %tobool8, label %if.then7, label %if.end22
```

```
if.then7:
  %two_pass_quantize = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 21
  %11 = load i32, i32* %two_pass_quantize, align 4, !tbaa.124
  %tobool16 = icmp eq i32 %11, 0
  br i1 %tobool16, label %if.else15, label %land.lhs.true9
```

```
land.lhs.true9:
  %enable_2pass_quant = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 25
  %12 = load i32, i32* %enable_2pass_quant, align 4, !tbaa.125
  %tobool10 = icmp eq i32 %12, 0
  br i1 %tobool10, label %if.else15, label %if.then11
```

```
if.else15:
  %enable_1pass_quant = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 23
  %16 = load i32, i32* %enable_1pass_quant, align 4, !tbaa.127
  %tobool16 = icmp eq i32 %16, 0
  br i1 %tobool16, label %if.else19, label %if.then17
```

```
if.then11:
  %quantizer_2pass = getelementptr inbounds %struct.my_decomp_master,
  ... %struct.my_decomp_master* %1, i64 0, i32 4
  %13 = bitcast %struct.jpeg_color_quantizer** %quantizer_2pass to i64*
  %14 = load i64, i64* %13, align 8, !tbaa.126
  %quantize12 = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 83
  %15 = bitcast %struct.jpeg_color_quantizer** %quantize12 to i64*
  store i64 %14, i64* %15, align 8, !tbaa.113
  store i32 1, i32* %is_dummy_pass, align 8, !tbaa.110
  br label %if.end22
```

```
if.else19:
  %err = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 0
  %20 = load %struct.jpeg_error_mgr*, %struct.jpeg_error_mgr** %err, align 8,
  ... !tbaa.129
  %msg_code = getelementptr inbounds %struct.jpeg_error_mgr,
  ... %struct.jpeg_error_mgr* %20, i64 0, i32 5
  store i32 45, i32* %msg_code, align 8, !tbaa.130
  %error_exit = getelementptr inbounds %struct.jpeg_error_mgr,
  ... %struct.jpeg_error_mgr* %20, i64 0, i32 0
  %21 = load void (%struct.jpeg_common_struct)*, void
  ... (%struct.jpeg_common_struct*)** %error_exit, align 8, !tbaa.133
  %22 = bitcast %struct.jpeg_decompress_struct* %cinfo to
  ... %struct.jpeg_common_struct*
  tail call void @21(%struct.jpeg_common_struct* %22) #3
  br label %if.end22
```

```
if.then17:
  %quantizer_1pass = getelementptr inbounds %struct.my_decomp_master,
  ... %struct.my_decomp_master* %1, i64 0, i32 3
  %17 = bitcast %struct.jpeg_color_quantizer** %quantizer_1pass to i64*
  %18 = load i64, i64* %17, align 8, !tbaa.128
  %quantize18 = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 83
  %19 = bitcast %struct.jpeg_color_quantizer** %quantize18 to i64*
  store i64 %18, i64* %19, align 8, !tbaa.113
  br label %if.end22
```

```
if.end22:
  %idct = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 80
  %23 = bitcast %struct.jpeg_inverse_dct** %idct to void
  ... (%struct.jpeg_decompress_struct*)***
  %24 = load void (%struct.jpeg_decompress_struct*)**, void
  ... (%struct.jpeg_decompress_struct*)*** %23, align 8, !tbaa.134
  %25 = load void (%struct.jpeg_decompress_struct*), void
  ... (%struct.jpeg_decompress_struct*)** %24, align 8, !tbaa.135
  tail call void @25(%struct.jpeg_decompress_struct* nonnull %cinfo) #3
  %coef = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 75
  %26 = load %struct.jpeg_d_coef_controller*, %struct.jpeg_d_coef_controller**
  ... %coef, align 8, !tbaa.137
  %start_output_pass = getelementptr inbounds %struct.jpeg_d_coef_controller,
  ... %struct.jpeg_d_coef_controller* %26, i64 0, i32 2
  %start_output_pass25 = bitcast (i1** %start_output_pass to void
  ... (%struct.jpeg_decompress_struct*)**
  %27 = load void (%struct.jpeg_decompress_struct*)*, void
  ... (%struct.jpeg_decompress_struct*)** %start_output_pass25, align 8, !tbaa.138
  tail call void @27(%struct.jpeg_decompress_struct* nonnull %cinfo) #3
  %raw_data_out = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 15
  %28 = load i32, i32* %raw_data_out, align 4, !tbaa.140
  %tobool26 = icmp eq i32 %28, 0
  br i1 %tobool26, label %if.then27, label %if.end51
```

```
if.then27:
  %using_merged_upsample = getelementptr inbounds %struct.my_decomp_master,
  ... %struct.my_decomp_master* %1, i64 0, i32 2
  %29 = load i32, i32* %using_merged_upsample, align 4, !tbaa.141
  %tobool28 = icmp eq i32 %29, 0
  br i1 %tobool28, label %if.then29, label %if.end32
```

```
if.then29:
  %convert = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 82
  %30 = bitcast %struct.jpeg_color_deconverter** %convert to void
  ... (%struct.jpeg_decompress_struct*)***
  %31 = load void (%struct.jpeg_decompress_struct*)**, void
  ... (%struct.jpeg_decompress_struct*)** %30, align 8, !tbaa.142
  %32 = load void (%struct.jpeg_decompress_struct*)*, void
  ... (%struct.jpeg_decompress_struct*)** %31, align 8, !tbaa.143
  tail call void %32(%struct.jpeg_decompress_struct* nonnull %cinfo) #3
  br label %if.end32
```

```
if.end32:
  %upsample = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 81
  %33 = bitcast %struct.jpeg_upsampler** %upsample to void
  ... (%struct.jpeg_decompress_struct*)***
  %34 = load void (%struct.jpeg_decompress_struct*)**, void
  ... (%struct.jpeg_decompress_struct*)*** %33, align 8, !tbaa.145
  %35 = load void (%struct.jpeg_decompress_struct*)*, void
  ... (%struct.jpeg_decompress_struct*)** %34, align 8, !tbaa.146
  tail call void %35(%struct.jpeg_decompress_struct* nonnull %cinfo) #3
  %36 = load i32, i32* %quantize_colors, align 4, !tbaa.122
  %tobool36 = icmp eq i32 %36, 0
  br i1 %tobool36, label %if.end42, label %if.then37
```

```
if.then37:
  %quantize38 = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 83
  %37 = load %struct.jpeg_color_quantizer*, %struct.jpeg_color_quantizer**
  ... %quantize38, align 8, !tbaa.113
  %start_pass39 = getelementptr inbounds %struct.jpeg_color_quantizer,
  ... %struct.jpeg_color_quantizer* %37, i64 0, i32 0
  %38 = load void (%struct.jpeg_decompress_struct*, i32)*, void
  ... (%struct.jpeg_decompress_struct*, i32)** %start_pass39, align 8, !tbaa.114
  %39 = load i32, i32* %is_dummy_pass, align 8, !tbaa.110
  tail call void %38(%struct.jpeg_decompress_struct* nonnull %cinfo, i32 %39)
  br label %if.end42
```

```
if.end42:
  %post43 = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 76
  %40 = load %struct.jpeg_d_post_controller*, %struct.jpeg_d_post_controller**
  ... %post43, align 8, !tbaa.116
  %start_pass44 = getelementptr inbounds %struct.jpeg_d_post_controller,
  ... %struct.jpeg_d_post_controller* %40, i64 0, i32 0
  %41 = load void (%struct.jpeg_decompress_struct*, i32)*, void
  ... (%struct.jpeg_decompress_struct*, i32)** %start_pass44, align 8, !tbaa.117
  %42 = load i32, i32* %is_dummy_pass, align 8, !tbaa.110
  %tobool47 = icmp ne i32 %42, 0
  %cond = select i1 %tobool47, i32 3, i32 0
  tail call void %41(%struct.jpeg_decompress_struct* nonnull %cinfo, i32
  ... %cond) #3
  %main48 = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 74
  %43 = load %struct.jpeg_d_main_controller*, %struct.jpeg_d_main_controller**
  ... %main48, align 8, !tbaa.119
  %start_pass49 = getelementptr inbounds %struct.jpeg_d_main_controller,
  ... %struct.jpeg_d_main_controller* %43, i64 0, i32 0
  %44 = load void (%struct.jpeg_decompress_struct*, i32)*, void
  ... (%struct.jpeg_decompress_struct*, i32)** %start_pass49, align 8, !tbaa.120
  tail call void %44(%struct.jpeg_decompress_struct* nonnull %cinfo, i32 0) #3
  br label %if.end51
```

```
if.end51:
  %progress = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 2
  %45 = load %struct.jpeg_progress_mgr*, %struct.jpeg_progress_mgr**
  ... %progress, align 8, !tbaa.148
  %cmp52 = icmp eq %struct.jpeg_progress_mgr* %45, null
  br i1 %cmp52, label %if.end72, label %if.then53
```

```
if.then53:
  %pass_number = getelementptr inbounds %struct.my_decomp_master,
  ... %struct.my_decomp_master* %1, i64 0, i32 1
  %46 = load i32, i32* %pass_number, align 8, !tbaa.149
  %completed_passes = getelementptr inbounds %struct.jpeg_progress_mgr,
  ... %struct.jpeg_progress_mgr* %45, i64 0, i32 3
  store i32 %46, i32* %completed_passes, align 8, !tbaa.150
  %47 = load i32, i32* %is_dummy_pass, align 8, !tbaa.110
  %tobool58 = icmp ne i32 %47, 0
  %cond59 = select i1 %tobool58, i32 2, i32 1
  %add = add nsw i32 %cond59, %46
  %total_passes = getelementptr inbounds %struct.jpeg_progress_mgr,
  ... %struct.jpeg_progress_mgr* %45, i64 0, i32 4
  store i32 %add, i32* %total_passes, align 4, !tbaa.152
  %buffered_image = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 14
  %48 = load i32, i32* %buffered_image, align 8, !tbaa.153
  %tobool61 = icmp eq i32 %48, 0
  br i1 %tobool61, label %if.end72, label %land.lhs.true62
```

```
land.lhs.true62:
  %inputctl = getelementptr inbounds %struct.jpeg_decompress_struct,
  ... %struct.jpeg_decompress_struct* %cinfo, i64 0, i32 77
  %49 = load %struct.jpeg_input_controller*, %struct.jpeg_input_controller**
  ... %inputctl, align 8, !tbaa.154
  %coi_reached = getelementptr inbounds %struct.jpeg_input_controller,
  ... %struct.jpeg_input_controller* %49, i64 0, i32 5
  %50 = load i32, i32* %coi_reached, align 4, !tbaa.155
  %tobool63 = icmp eq i32 %50, 0
  br i1 %tobool63, label %if.then64, label %if.end72
```

```
if.then64:
  %enable_2pass_quant65 = getelementptr inbounds
  ... %struct.jpeg_decompress_struct, %struct.jpeg_decompress_struct* %cinfo, i64
  ... %16 = load i32, i32* %enable_2pass_quant65, align 4, !tbaa.125
  %tobool66 = icmp ne i32 %51, 0
  %cond67 = select i1 %tobool66, i32 2, i32 1
  %add70 = add nsw i32 %add, %cond67
  store i32 %add70, i32* %total_passes, align 4, !tbaa.152
  br label %if.end72
```

```
if.end72:
  ret void
```