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Cause Codes and Debug Values

Codec complexity refers to the amount of processing power that a codec compression technique requires: some require more processing power than others. Codec complexity affects call density, which is the number of calls that can take place on the DSP interfaces. The DSP interfaces can be HCMs, port adapter DSP farms, or voice cards, depending on the type of router. The greater the codec complexity, the fewer the calls that can be handled.

Codec complexity is either medium or high. The difference between medium- and high-complexity codecs is the amount of CPU power necessary to process the algorithm and, therefore, the number of voice channels that can be supported by a single DSP. All medium-complexity codecs can also be run in high-complexity mode, but in that mode fewer (usually half as many) channels are available per DSP.

For details on the number of calls that can be handled simultaneously through the use of each of the codec standards, refer to the entries for the **codec** and **codec complexity** commands in the Cisco IOS Voice Command Reference.

Codec Complexity Mismatch

You might encounter a situation in which the router cannot set up a call and a message similar to the following appears in the output:

```
21:12:54: %DSPRM-5-SETCODEC: Configured codec 10 is not supported with this dsp image.
```

This condition indicates that the codec complexity and the voice card complexity configuration are mismatched. This problem can appear on Cisco modular access routers with HDV modules. This problem can affect Cisco IOS software Releases 12.0(7)T and later.

To see if you have this problem, you need to check the following conditions:

- Check if the codec you are using is a high-complexity codec. For more information about codecs, refer to Understanding Codecs: Complexity, Hardware Support, MOS, and Negotiation, document ID 14069.
- If you are going to use high-complexity codecs, check the voice card configuration. It should also be configured as high complexity.

The default configuration for voice cards on routers with HDV modules is medium complexity. To allow usage of high-complexity codecs, use the **voice-card 1** and **codec complexity high** configuration commands.

Note: To change the voice card codec complexity, remove all voice ports bound to the card and remove the configuration from the E1/T1 controller.