Connection Listener Setup Getting started

A connection listener is a special kind of connection end that listens for open-connection requests from remote connection ends. Connection listeners are used by **connection servers**-that is, programs that assign a socket for the local connection end only after they receive a connection request from a remote connection end. A single connection listener can receive connection requests from any number of remote connection ends.

You can use the routines in this section to

- establish a connection listener
- cause the connection listener to wait for a connection request
- deny a connection request
- close and eliminate a connection listener

The .DSP Driver implements the special communications protocol called the **AppleTalk DSP (ADSP)**. You send commands to **ADSP** and obtain information about **ADSP** by executing **The .DSP Driver** routines described in this section.

Each routine is implemented as a call to the **Device Manager**'s **PBControl** function, as follows:

```
OSErr       PBControl(thePBptr, async);
ParmBlkPtr  thePBptr;     address of a parameter block structure
Boolean     async;        0=await completion; 1=immediate return
            returns       Error Code; 0=no error
```

thePBptr is a pointer to the parameter block used by the **PBControl** function for .DSP routines

async is a Boolean that specifies whether the function is to execute synchronously or asynchronously. Set the async parameter to TRUE to execute the function asynchronously.

The parameter block is shown in the **DSPParamBlock** . The parameters used with each function are described in this section.

For a general discussion of the use of **ADSP**, see **Using ADSP** in the section **AppleTalk DSP (ADSP)**.

dspCLInit

Parameter block

Out-In	Name	Type	Size	Offset	Description
←	ioResult	short	2	16	Result code
→	ioCRefNum	short	2	24	Driver reference number
→	csCode	short	2	26	Always dspCLInit
←	ccbRefNum	short	2	32	Reference number of **CCB**
→	ccbPtr	long	4	34	Pointer to **CCB**
↔	localSocket	char	1	58	Local DDP socket number

The dspCLInit routine establishes a connection listener; that is, it assigns a specific socket for use by **ADSP** and initializes the variables that **ADSP** uses to maintain a connection listener. The dspCLInit routine does not cause the connection listener to listen for connection requests; you must follow the dspCLInit routine with the dspCLListen routine to activate the connection listener. Use the dspInit routine to establish a connection end that is not a connection listener. Use the dspCLRemove routine to eliminate a connection listener.

The ioResult parameter returns the result of the routine. If you call the routine asynchronously, the routine sets this field to 1 as soon as it begins execution, and it changes the field to the actual result code when it completes execution. The ioCRefNum parameter is the driver reference number returned by the **OpenDriver** function. You must specify this number every time you call **The .DSP Driver**. The csCode parameter is the routine selector, always dspCLInit for this routine. The dspCLInit routine returns the ccbRefNum parameter, which is the **CCB** reference number. You must provide this number in all subsequent dspCLListen and dspCLRemove calls to this connection listener.

You must allocate memory for a **CCB** before you call the dspCLInit routine. The ccbPtr parameter is a pointer to the **CCB** that you allocated. The **CCB** is 242 bytes long (see, **Connection Control Block**). The localSocket parameter is the DDP socket number of the socket that you want **ADSP** to use for this connection end. Specify 0 for this parameter to cause **ADSP** to assign the socket. In the latter case, **ADSP** returns the socket number when the dspCLInit routine completes execution.

Result codes

noErr	(0)	No error
ddpSktErr	(-91)	Error opening socket

dspCLListen

Parameter block

Out-In	Name	Type	Size	Offset	Description
←	ioResult	short	2	16	Result code
→	ioCRefNum	short	2	24	Driver reference number
→	csCode	short	2	26	Always dspCLListen
→	ccbRefNum	short	2	32	Reference number of **CCB**
←	remoteCID	short	2	36	ID of remote connection end
←	remoteAddress	long	4	38	Remote internet address
→	filterAddress	long	4	42	Filter for open-connection requests
←	sendSeq	long	4	46	Initial send sequence number
←	sendWindow	short	2	50	Initial size of remote receive queue
←	attnSendSeq	long	4	56	Attention send sequence number

The dspCLListen routine causes a connection listener to listen for connection requests. You must have already used the dspCLInit routine to establish a connection listener before using the dspCLListen routine. The dspCLListen routine is used only by connection servers.

When **ADSP** receives an open-connection request from a socket that satisfies the address requirements of the filterAddress parameter, it returns values for the *remoteCID*, *remoteAddress*, *sendSeq*, *sendWindow*, and *attnSendSeq* parameters and completes execution of the dspCLListen routine. You must then either accept the open-connection request by calling the dspOpen routine in the

ocAccept mode or deny the request by calling the dspCLDeny routine.

You can call the dspCLListen routine several times, specifying the same connection listener. For example, if you wanted to accept connections from any or all of three different addresses, you could call the dspCLListen routine three times with a different value for the filterAddress parameter each time. Note that you must execute the dspCLListen routine asynchronously to take advantage of this feature.

Field descriptions

ioResult — The result of the routine. When you execute the routine asynchronously, the routine sets this parameter to 1 and returns a routine result of noErr as soon as the routine begins execution. When the routine completes execution, it sets the *ioResult* parameter to the actual result code.

ioCRefNum — The driver reference number. This parameter is returned by the **OpenDriver** function You must specify this number every time you call **The .DSP Driver**.

csCode — The routine selector, always dspCLListen for this routine.

ccbRefNum — The **CCB** reference number that was returned by the dspCLInit routine.

remoteCID — The identification number of the remote connection end. You must pass this value to the dspOpen routine when you open the connection or to the dspCLDeny routine when you deny the connection request.

remoteAddress — The internet address of the remote socket that sent a request to open a connection. This address consists of a 2-byte network number, a 1-byte node ID, and a 1-byte socket number. You must pass this value to the dspOpen routine when you open the connection or to the dspCLDeny routine when you deny the connection request.

filterAddress — The internet address of the socket from which you will accept a connection request. The address consists of three fields: a 2-byte network number, a 1-byte node ID, and a 1-byte socket number. Specify 0 for any of these fields for which you wish to impose no restrictions. If you specify a filter address of 0x000082500, for example, the connection listener accepts a connection request from any socket at node 0x025 of network 0x00008.

sendSeq — The sequence number of the first byte that the local connection end will send to the remote connection end. **ADSP** uses this number to coordinate communications and to check for errors. You must pass this value to the dspOpen routine when you open the connection.

SendWindow — The sequence number of the last byte that the remote connection end has buffer space to receive. **ADSP** uses this number to coordinate communications and to check for errors. You must pass this value to the dspOpen routine when you open the connection.

attnSendSeq — The sequence number of the next attention packet that the local connection end will transmit. **ADSP** uses this number to coordinate communications and to check for errors. You must pass this value

to the dspOpen routine when you open the connection.

Result codes

noErr	(0)	No error
errState	(-1278)	Not a connection listener
errAborted	(-1279)	Request aborted by the dspRemove routine
errRefNum	(-1280)	Bad connection reference number

dspCLDeny

Parameter block

Out-In	Name	Type	Size	Offset	Description
←	ioResult	short	2	16	result code
→	ioCRefNum	short	2	24	driver reference number
→	csCode	short	2	26	always dspCLDeny
→	ccbRefNum	short	2	32	reference number of **CCB**
→	remoteCID	short	2	36	ID of remote connection end
→	remoteAddress	long	4	38	remote internet address

The dspCLDeny routine is used by a connection server to inform a remote connection end that its request to open a connection cannot be honored.

The ioResult parameter returns the result of the routine. If you call the routine asynchronously, the routine sets this field to 1 as soon as it begins execution, and it changes the field to the actual result code when it completes execution. The ioCRefNum parameter is the driver reference number returned by the **OpenDriver** function You must specify this number every time you call **The .DSP Driver** The csCode parameter is the routine selector; it is always dspCLDeny for this routine. The ccbRefNum parameter is the **CCB** reference number for the connection listener that received the connection request. This number is returned by the dspCLInit routine when you establish a connection listener. The remoteCID and remoteAddress parameters specify the address and ID of the remote connection end. These parameters are returned by the dspCLListen routine.

Result codes

noErr	(0)	No error
errState	(-1278)	Not a connection listener
errAborted	(-1279)	Request aborted by the dspRemove routine
errRefNum	(-1280)	Bad connection reference number

dspCLRemove

Parameter block

Out-In	Name	Type	Size	Offset	Description
←	ioResult	short	2	16	Result code
→	ioCRefnum	short	2	24	Iodriver reference number
→	csCode	short	2	26	Always dspCLRemove
→	ccbRefNum	short	2	32	Reference number of**CCB**
→	abort	char	1	34	Abort connection listener if not 0

The dspCLRemove routine closes a connection end used as a connection listener. You can release the memory you allocated for the CCB if you do not intend to reopen the connection end.

The ioResult parameter returns the result of the routine. If you call the routine asynchronously, the routine sets this field to 1 as soon as it begins

execution, and it changes the field to the actual result code when it completes execution. The ioCRefNum parameter is the driver reference number returned by the **OpenDriver** function. You must specify this number every time you call **The .DSP Driver**. The csCode parameter is the routine selector, always dspCLRemove for this routine. The ccbRefNum parameter is the **CCB** reference number that was returned by the dspCLInit routine. If the abort parameter is nonzero, **ADSP** cancels any outstanding requests to send pockets (such as the dspCLDeny routine).

Result codes

noErr	(0)	No error
errRefNum	(-1280)	Bad connection reference number