SVC 99 Parameter List

When you code DYNALLOC, you must supply a parameter list, which includes a request block, text pointers, and text units. Figure 5 illustrates the structure of the SVC 99 parameter list. IBM supplies two macros IEFZB4D0 and IEFZB4D2 to aid in constructing the SVC 99 parameter list. IEFZB4D0 provides symbolic names (dummy sections) for the positional information in the structure; IEFZB4D2 provides mnemonics for the text unit keyword values. The names in Figure 5 are those assigned by the macro IEFZB4D0.

Register 1 must point to a pointer to the request block. The text pointers in the request block and the text units must be created in real storage (storage obtained via the GETMAIN macro instruction). Upon entry to SVC 99, these fields are copied into the SVC's workarea and, before exit from SVC 99, these fields are restored into the real storage area. This copy and restore function is always performed. An 0C4 ABEND will occur if the parameter list pointer, the request block pointer, or the text unit pointers contain addresses of real storage not owned by the caller.

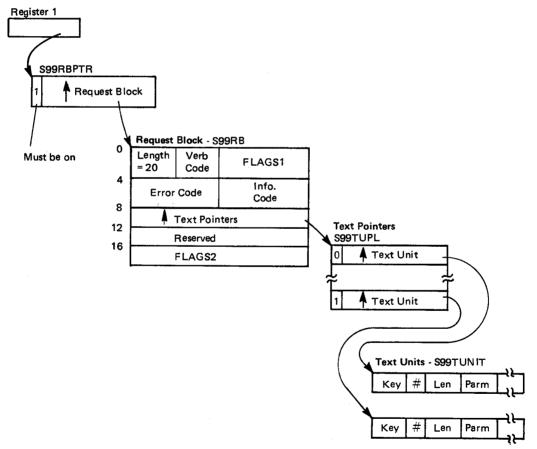


Figure 5. Structure of the SVC 99 Parameter List

Request Block

The request block must begin on a fullword boundary. It contains the following fields (the names in parentheses are those assigned by the mapping macro IEFZB4D0):

- LENGTH (S99RBLN) This field is a one-byte field that contains the length of the request block. The length is always 20 bytes.
- VERB CODE (S99VERB) The verb code is a one-byte field that identifies the SVC 99 function to be performed. The following codes may be specified:

Verb Code	Name	Meaning
01	S99VRBAL	Request for dsname allocation
02	S99VRBUN	Request for unallocation (based on dsname or ddname)
03	S99VRBCC	Request for concatenation
04	S99VRBDC	Request for deconcatenation
05	S99VRBRI	Request for removing the in-use attribute based on task-id
06	S99VRBDN	Request for ddname allocation
07	S99VRBIN	Request for information retrieval

• FLAGS1 (S99FLAG1)The FLAGS1 field is a two-byte field that instructs the system on how to satisfy dsname allocation requests. The meaning of the bits in the field are as follows:

Bit	Bit Name	Meaning When On
0	S99ONCVN	Do not use an existing allocation that does not have the convertible
		attribute to satisfy the request.
1	S99NOCNV	Do not use an existing allocation to satisfy this request.
2	S99NOMNT	Do not mount volumes or consider offline units. (This bit overrides
		S99MOUNT and S99OFFLN in FLAGS2.) If this bit is one and the
		request causes a private catalog to be allocated, mounting will not be
		allowed for that catalog.
3	S99JBSYS	Treat the data set as part of the job's normal output. The data set is not
		expected to be dynamically unallocated (spun off). This flag is used for
		SYSOUT data sets. If the data set is dynamically unallocated the data set
		will be printed immediately but paging space will not be released until the
		job ends.
4	S99CNENQ	Issue a conditional ENQ on the TIOT resource. If not available, an error
		code is returned to user.
5-16		Reserved; must be zero

Note: The FLAG2 indicators are used only for dsname allocation requests.

- ERROR CODE (S99ERROR) This field is a two-byte field that SVC 99 uses to return error reason codes. See the topic "SVC 99 Return Codes."
- INFO CODE (S99INFO) This two-byte field is used by SVC 99 to return information reason codes. See the topic "SVC 99 Return Codes."
- TEXT POINTERS ADDRESS (S99TXTPP) This fullword field contains the address of a list of pointers to the text units.
- RESERVED An area, one fullword in length, that contains zeros.
- FLAGS2 (S99FLAG2) The FLAGS2 field is a four-byte field of indicators. These indicators may be set only by authorized programs. To be authorized, the requesting program must meet at least one of the following criteria:
 - It must have a system storage protection key (0-7).
 - It must be in supervisor state.
 - It must be in APF authorized.

The meanings of the bits are:

Bit	Bit Name	Meaning When On
0	S99WTVOL	Wait for volumes.
1	S99WTDSN	Wait for dsname.
2	S99NORES	Do not reserve data sets.
3	S99WTUNT	Wait for units.
4*	S99OFFLN	Consider offline devices. If S99NOMNT in FLAGS1 is off and this bit is
		on for a background job or if a time-sharing user does not have the
		mount attribute in his UADS entry, the system will consider offline
		devices. This bit is ignored if S99NOMNT is on or if the time-sharing user
		hs the mount attribute in his UADS entry.
5	S99TIONQ	TIOT ENQ already performed.
6	S99CATLG	Set special catalog data set indicators.
7*	S99MOUNT	Volumes may be mounted. If S99NOMNT in FLAGS1 is off and this bit
		is on for a background job or if a time-sharing user does not have the
		mount attribute in his UADS entry, the system will allow volumes to be
		mounted. This bit is ignored if S99NOMNT is on or if the time-sharing
		user has the mount attribute in his UADS entry.
8	S99UDEVT	Unitname parameter is a device type.
9	S99PCINT	Allocate a private catalog on behalf of the initiator.
10-31		Reserved. Must be zero.

^{*}These fields override the NOMOUNT option from the user attribute data set (UADS) for TSO users.

Text Pointers

The text pointer part of the parameter list is a variable-length list of fullword pointers to text units. The end of the list is indicated by setting on the high-order bit of the last pointer. A fullword of zeros is ignored. Mapping macro IEF2B4DO assigns the label S99TUPL to the list, the label S99TUPTR to each pointer in the list, an label S99TUPLN to an equate that allows you to turn on the end-of-list indicator.

Text Units

Each text unit is a variable-length field (labeled S99UNIT by macro IEFZB4D0) that contains the following subfields:

- KEY (S99KEY) A two-byte field that contains a unique binary number that identifies the type of information to be found in the PARM subfield. For example, a key of '0004' for a dsname allocation request indicates that the value of the PARM subfield specifies data set status. SVC 99 ignores a KEY field of zero. Each SVC 99 function has an associated set of text units, and each set is independent of any other. For example, the functions of both allocation and unallocation may use a KEY value of '0007' but that value does not necessarily have the same meaning for each function. See the topic "Text Units by Function" for a description of the text units that can be coded for each SVC 99 function.
- NUMBER (S99TUNUM) A two-byte binary number that specifies the number of length and parameter combinations in the text unit. If a key of zero is specified, S99TUNUM must also be zero.
- COMBINATION (S99UENT) The label for a length an parameter combination. IEFZB4D0 provides the following DSECT for use when specifying multiple parameters in a single text unit. This DSECT places the length field at zero displacement for the second an subsequent combinations:

S99TUFLD	Label for the DSECT
S99TULEN	Label for the length field
S99TUPRM	Label for the parameter

- LENGTH (S99TULNG) A two-byte binary number that specifies the length of the following parameter field.
- PARM (S99TUPAR) This field contains a value that provides the parameter information identified by the KEY field. See "Text Units by Function" for a description of the values that can be coded for each key.

SVC 99 Return Codes

Note: The labels used in this topic are assigned by macros IEFZB4D0 and IEFZB4D2.

When the SVC 99 routines return control to the requesting program, register 15 contains a return code. Depending on the return code, the S99ERROR and S99INFO fields in the input request block (S99RB) may additionally contain error and information reason codes respectively. The return codes that can be returned in register 15 are shown in Figure 6.

Code	Meaning
0	Successful completion; there will also be an information reason code if a non-terminating error
U	occurred during request processing.
4	An error resulted from the current environment, the unavailability of a system resource, or a
	system routine failure; there will also be an error reason code.
8	The installation validation routine denied this request. (See "Installation Input Validation Routine"
	for additional information.)
12	The error is due to an invalid parameter list; there will also be an error reason code from class
- -	3. (Class 3 reason codes are listed in Figure 7.)

Figure 6. SVC 99 Return Codes

The DAIRFAIL TSO service routine can be used to issue write-to-programmer of TSO PUTLINE failure messages for both DAIR and SVC 99 error codes. Refer to "OS/VS2 TSO Guide to Writing a Terminal Monitor Program or a Command Processor" for information on using DAIR and DAIRFAIL.

The next two topics describe the information and error reason codes that can be returned in the SVC 99 request block. The last topic in this chapter describes dsname allocation processing in detail; you might need this information to understand the error and information codes returned by dsname allocation.

Information Reason Codes

The codes below are returned in the two-byte field (S99INFO) in the request block.

Code Meaning 0004 Reserved

8000 Overriding disposition ignored for one of the following reasons:

- Data set was originally allocated with a disposition of PASS
- Data set is a non-subsystem data set that has a system-generated name; you cannot override disposition on this type of data set
- Data set is a VSAM data set

In these cases, the data set is unallocated using the disposition specified when the request was allocated.

000C-001C Reserved

002n The data set was successfully unallocated but processing of the requested CATLG or

UNCATLG disposition was unsuccessful. The digit "n" is a code representing the reason for the failure. Below is a list of the possible codes and meanings.

Code Meaning

- A control volume was required and a utility program must be used to catalog the data set.
- 2 The data set to be cataloged had previously been cataloged, or the data set to be uncataloged could not be located, or no change was made to the volume serial list of a data set with a disposition of CATLG.
- The specified index did not exist.
- The data set could not be cataloged because the space was not available in the catalog.
- Not enough storage was available to perform the specified cataloging.
- The data set to be cataloged in a generation index is improperly named.
- The data set to be cataloged had not been opened and no density information was provided (for dual density tape requests only).
- Reserved
- An uncorrectable I/O error occurred in reading or writing the catalog.

003n The data set was successfully unallocated but processing of requested DELETE disposition was unsuccessful. The digit "n" code represents the reason for the failure. Following is a list of the possible codes and their meanings.

- The expiration date had not occurred.
- 2 Reserved
- Reserved
- No device was available for mounting for the volume during deletion.
- Not enough storage was available to perform the specified deletion.
- Either no volumes were mounted or volumes that were mounted could not be demounted to permit the remaining volumes to be mounted.
- The SCRATCH routine returned an error code. If the user's JOB statement requested allocation/termination messages, message IEF283I will appear in the SYSOUT listing. This message will list the volume serial numbers of the data sets that were not deleted; following each number will be a code that explains why each data set was not deleted.

Error Reason Codes

Error reason codes are divided into the following classes:

Class Description Reserved 2

- Unavailable system resource
- 3 Invalid parameter list
- 4 Environmental error
- 5 Reserved
- 6 Reserved
- System routine error

The error reason codes are contains the codes shown in Figure 7. The second hexadecimal digit will be one of the class designations above. The error code field in the SVC 99 request block is labeled S99ERROR.

Note: The explanations of the codes in Figure 7 are followed by an indication of the kind of request associated with the code.

CLASS 2 CODES

Code	Meaning
0204	Real storage unavailable (dsname allocation).
0208	Reserved.
020C	Request for exclusive use of a shared data set cannot be honored (dsname allocation)
0210	Requested data set unavailable. The data set is allocated to another job and its usage attribute conflicts with this request. (dsname allocation)
0214	Unit(s) not available (dsname allocation)
0218	Specified volume or an acceptable volume is not mounted and user does not have volume mounting authorization. (dsname allocation)
021C	Unit name specified is undefined. (dsname allocation)
0220	Requested volume not available. (dsname allocation) 3
0224	Eligible device types do not contain enough units. (dsname allocation)
0228	Specified volume or unit in use by system. (dsname allocation)
022C	Volume mounted on ineligible permanently resident or reserved unit. (dsname allocation)
0230	Permanently resident or reserved volume on required unit. (dsname allocation)
0234	More than one device required for a request specifying a specific unit. (dsname allocation)
0238	Space unavailable in Task Input Output Table (TIOT). (dsname allocation concatenation)
023C	Required catalog not mounted and user does not have volume mounting authorization. (dsname allocation)
0240	Requested device is a console. (dsname allocation)
0244	Telecommunication device not accessible. (dsname allocation)
0248	MSS virtual volume unable to be mounted. (dsname allocation)
024C	Operating system managed resource was unavailable to the subsystem. (dsname allocation) 8
0250	Subsystem resource not available. (dsname allocation 8
0254	The TIOT resource is currently unavailable and the user requested conditional ENQ on the resource. (all SVC 99 functions)

- 1 The informational reason code field contains 0004 if the requested function was performed, although an error occurred as the error reason code indicates.
- 2 The informational reason code contains the value of the key that caused the error.
- 3 For MSS requests, the MSSC reason code for this failing job step is contained in message IEF710I on the hardcopy log. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages . For non-MSS request this code will be accompanied by IEF485I, or it may result from a JES3 failure because of a busy or unavailable situation.
- 4 The MSSC reason code for this failing job step is contained in message IEF710I on the hardcopy log. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages
- 5 This code corresponds to MSSC reason code X'007', which is explained in OS/VS Message Library: Mass Storage System (MSS) Messages
- 6 This code corresponds to MSSC reason code X'207', which is explained in OS/VS Message Library: Mass Storage System (MSS) Messages
- 7 The informational reason code field contains the MSSC reason code. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages
- 8 The information reason code contains a subsystem defined value to further describe the error. This value is documented in publications associated with the particular subsystem.

Figure 7. Error Reason Codes (Part 1 of 5)

CLASS 3 CODES

Code	Meaning
0304-0338	Assigned by DAIR. (See OS/VS2 TSO Guide to Writing a Terminal Monitor Program or a
	Command Processor .)
033C-0354	Reserved.
0358	Overriding disposition of DELETE invalid for data set allocated as SHR. (unallocation)1
035C	Invalid PARM specified in text unit. (all SVC 99 functions) 2
0360	Invalid KEY specified in text unit. (all SVC 99 functions) 2
0364	JOBLIB/STEPLIB/JOBCAT/STEPCAT specified as ddname, or associated with specified dsname; dsname allocation, ddname allocation, unallocation, concatenation,
	deconcatenation 1
0368	Authorized function requested by unauthorized user. (all SVC 99 functions)
036C	Invalid parameter list format. (all SVC 99 functions)
0370	Reserved.
0374	Invalid # specified in text unit. (all SVC 99 functions) 2
0378	Duplicate KEY specified in text unit. (all SVC 99 functions) 2
037C	Invalid LEN specified in text unit. (all SVC 99 functions) 2
0380	Mutually exclusive KEY specified. Two keys that cannot be used together were used in the text unit. (dsname allocation, unallocation, information retrieval, remove in-processing) 2
0384	Mutually inclusive KEY not specified. One key was used; two should have been used. (unallocation, dsname allocation) 2
0388	Required key not specified. (ddname allocation, nformation retrieval, concatenation,
	deconcatenation, remove in-processing, unallocation)
038C	Duplicate ddnames specified. (concatenation)
0390	GDG group name specified with relative generation number exceeds 35 characters. (dsname allocation)
0394	Status and relative generation number are incompatible. (dsname allocation)
0398	Volume sequence number exceeds the number of volumes. (dsname allocation)
039C	Device type and volume are incompatible. (dsname allocation)
03A0	Subsystem detected an invalid parameter. (dsname allocation) 8
03A4	Unable to PROTECT data set/volume because of conflicting keyword specification.

- 1 The informational reason code field contains 0004 if the requested function was performed, although an error occurred as the error reason code indicates.
- 2 The informational reason code contains the value of the key that caused the error.
- 3 For MSS requests, the MSSC reason code for this failing job step is contained in message IEF710I on the hardcopy log. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages . For non-MSS request this code will be accompanied by IEF485I, or it may result from a JES3 failure because of a busy or unavailable situation.
- 4 The MSSC reason code for this failing job step is contained in message IEF710I on the hardcopy log. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages
- 5 This code corresponds to MSSC reason code X'007', which is explained in OS/VS Message Library: Mass Storage System (MSS) Messages
- 6 This code corresponds to MSSC reason code X'207', which is explained in OS/VS Message Library: Mass Storage System (MSS) Messages
- 7 The informational reason code field contains the MSSC reason code. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages
- 8 The information reason code contains a subsystem defined value to further describe the error. This value is documented in publications associated with the particular subsystem.

Figure 7. Error Reason Codes (Part 2 of 5)

CLASS 4 CODES

Code	Meaning
0404-040C	Reserved.
0410	Specified ddname unavailable. (dsname allocation, ddname allocation)
0414-041C	Reserved.
0420	Specified ddname or dsname associated with an OPEN data set. (ddname allocation,
	concatenation, deconcatenation, unallocation, dsname allocation) 1
0424	Deconcatenation would result in duplicate ddnames (deconcatenation). 1
0428-0430	Reserved.
0434	Ddname specified in ddname allocation request is associated with a convertible or non- permanently allocated resource. (ddname allocation)
0438	Specified ddname not found. (information retrieval, ddname allocation, concatenation,
	deconcatenation, unallocation)
043C	Resources could not be unallocated to decrease the number of resources held in anticipation or
	reuse to meet the limit of the control value. (dsname allocation)
0440	Specified dsname not found. (information retrieval, unallocation)
0444	Relative entry number specified in information retrieval request not found. (information retrieval
0448	Request for a new data set failed; the data set already exists. (dsname allocation)
044C	Request was made for a data set that has a disposition of delete; this request cannot be honored
	because the data set may be deleted at any time. (dsname allocation)
0450	Request would cause the limit of 1635 concurrent allocations to be exceeded. (dsname allocation)
0454	Ddname in DCB reference not found. (dsname allocation)
0458	Dsname in DCB reference or volume reference is a GDG group name. (dsname allocation)
045C	Specified dsname to be unallocated is a member of permanently concatenated group.
	(unallocation) 1
0460	Specified dsname or member to be unallocated is not associated with specified ddname. unallocation)

- **Note:** The failing system routine returns the code represented by "zz".

 1 The informational reason code field contains 0004 if the requested function was performed, although an error occurred as the error reason code indicates.
- 2 The informational reason code contains the value of the key that caused the error.
- 3 For MSS requests, the MSSC reason code for this failing job step is contained in message IEF710I on the hardcopy log. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages . For non-MSS request this code will be accompanied by IEF485I, or it may result from a JES3 failure because of a busy or unavailable situation.
- 4 The MSSC reason code for this failing job step is contained in message IEF710I on the hardcopy log. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS)
- 5 This code corresponds to MSSC reason code X'007', which is explained in OS/VS Message Library: Mass Storage System (MSS) Messages .

 6 This code corresponds to MSSC reason code X'207', which is explained in OS/VS Message Library: Mass
- Storage System (MSS) Messages
- 7 The informational reason code field contains the MSSC reason code. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages.

 8 The information reason code contains a subsystem defined value to further describe the error. This value
- is documented in publications associated with the particular subsystem.

Figure 7. Error Reason Codes (Part 3 of 5)

CLASS 4 CODES

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- 1 The informational reason code field contains 0004 if the requested function was performed, although an error occurred as the error reason code indicates.
- 2 The informational reason code contains the value of the key that caused the error.
- 3 For MSS requests, the MSSC reason code for this failing job step is contained in message IEF710I on the hardcopy log. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages . For non-MSS request this code will be accompanied by IEF485I, or it may result from a JES3 failure because of a busy or unavailable situation.
- 4 The MSSC reason code for this failing job step is contained in message IEF710I on the hardcopy log. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages
- 5 This code corresponds to MSSC reason code X'007', which is explained in OS/VS Message Library: Mass Storage System (MSS) Messages .

 6 This code corresponds to MSSC reason code X'207', which is explained in OS/VS Message Library: Mass
- Storage System (MSS) Messages
- 7 The informational reason code field contains the MSSC reason code. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages
- 8 The information reason code contains a subsystem defined value to further describe the error. This value is documented in publications associated with the particular subsystem.

Figure 7. Error Reason Codes (Part 4 of 5)

CLASS 7 CODES

Code	Meaning
17zz	LOCATE error; dsname allocation. (Note: Hexadecimal '08', '18', and '2C' are the only expected LOCATE return codes. 'FF' is returned as the value of zz if an unexpected return code is
	returned by LOCATE)9
27zz	Reserved
37zz	Reserved
47zz	DADSM error. (dsname allocation)9
57zz	CATALOG error. (dsname allocation)9
67zz	OBTAIN error. (dsname allocation, information retrieval)9
7700	Subsystem error. (dsname allocation)8
7704	A subsystem interface system error occurred while processing key DALSSNM

- 1 The informational reason code field contains 0004 if the requested function was performed, although an error occurred as the error reason code indicates.
- 2 The informational reason code contains the value of the key that caused the error.
- 3 For MSS requests, the MSSC reason code for this failing job step is contained in message IEF710I on the hardcopy log. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages . For non-MSS request this code will be accompanied by IEF485I, or it may result from a JES3 failure because of a busy or unavailable situation.
- 4 The MSSC reason code for this failing job step is contained in message IEF710I on the hardcopy log. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS)
- 5 This code corresponds to MSSC reason code X'007', which is explained in OS/VS Message Library: Mass Storage System (MSS) Messages
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- 7 The informational reason code field contains the MSSC reason code. An explanation of the MSSC reason code is contained in OS/VS Message Library: Mass Storage System (MSS) Messages
- 8 The information reason code contains a subsystem defined value to further describe the error. This value is documented in publications associated with the particular subsystem.
- 9 For LOCATE, DADSM, CATALOG, and OBTAIN return code detailed description see OS/VS2 MVS System Programming Library: Data Management

Figure 7. Error Reason Codes (Part 5 of 5)