



**TABLE xyz. REPORT TIME-OF-DAY command**

<u>Byte</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>0</u>
<u>10</u>	<u>Reserved</u>							
<u>11</u>	<u>CONTROL</u>							

The ALLOCATION LENGTH field specifies the number of bytes that have been allocated for the returned parameter data. An allocation length that is not sufficient to contain the entire parameter list shall not be considered an error.

If the complete list is required, the application client should send a new REPORT TIME-OF-DAY command with an allocation length large enough to contain the entire list.

The format of the parameter data returned by the REPORT TIME-OF-DAY command is shown in table vvy.

**TABLE vvv. REPORT TIME-OF-DAY parameter data format**

Byte	7	6	5	4	3	2	1	0
<u>0</u>	<u>TIME-OF-DAY PARAMETER DATA LENGTH (n-3)</u>							
<u>3</u>								
	<u>Time-of-day descriptors</u>							
<u>4</u>	<u>First time-of-day descriptor (see table xxx)</u>							
	<u>:</u>							
	<u>Last time-of-day descriptor (see table xxx)</u>							
<u>n</u>								

The TIME-OF-DAY PARAMETER DATA LENGTH field specifies the number of bytes of parameter data that follow.

Each time-of-day descriptor (see table xxx) contains time-of-day information for a single method.

**TABLE xxx. Time-of-day descriptor**

Byte	7	6	5	4	3	2	1	0
0	<u>ADDITIONAL_DESCRIPTOR_LENGTH (n-1)</u>							
1								
2	<u>Reserved</u>						<u>TODC</u>	
3	<u>Reserved</u>							
4	<u>TIME-OF-DAY</u>							
11								

### TABLE 1. TIME-OF-DAY METHOD Field

<u>Value</u>	<u>Definition</u>
<u>00b</u>	<u>Time-of-day value of the clock set by the device (i.e. device's internal clock value)</u>
<u>01b</u>	<u>Reserved</u>
<u>10b</u>	<u>Time-of-day value of the clock set by a SCSI command</u>
<u>11b</u>	<u>Time-of-day value of the clock set by Protocol specific methods</u>

If the TOD field has never been set, the TOD field contains the elapsed power on time from the default value of 00h, which corresponds to a time of January 1, 1970, 0:00 AM, Greenwich Mean Time (GMT).

The SET TIME-OF-DAY command (see table xx) is used to provide the device with an estimate of the time-of-day. The time-of-day set by this command shall remain in effect until one of the following occurs:

- The time-of-day set by this command shall not be affected by an I\_T nexus loss and should not be affected by a Logical Unit reset or Hard reset.

The SET TIME-OF-DAY command is a service action of the MAINTENANCE OUT command. Additional MAINTENANCE OUT service actions are defined in SCC-2 and in this standard. The MAINTENANCE OUT service actions defined only in SCC-2 apply only to logical units that return a device type of 0Ch or the sccs bit equal to one in their standard INQUIRY data..

**TABLE xx. SET TIME-OF-DAY command**

<u>Byte</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>0</u>
<u>0</u>	<u>OPERATION CODE (A4h)</u>							
<u>1</u>	<u>Reserved</u>			<u>SERVICE ACTION (0Fh)</u>				
<u>2</u>	<u>Reserved</u>							
<u>5</u>								

**TABLE xx. SET TIME-OF-DAY command**

<u>Byte</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>0</u>
<u>6</u>	<u>ALLOCATION LENGTH</u>							
<u>2</u>								
<u>10</u>	<u>Reserved</u>							
<u>11</u>	<u>CONTROL</u>							

The PARAMETER LIST LENGTH field specifies the length in bytes of the SET TIME-OF-DAY parameter list (see table zzz) that shall be contained in the Data-Out Buffer. A parameter list length of zero indicates that the Data-Out Buffer shall be empty. This condition shall not be considered as an error.

**TABLE xxx. SET TIME-OF-DAY parameter list format**

<u>Byte</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>0</u>
<u>0</u>	<u>ADDITIONAL LENGTH (n-1)</u>							
<u>1</u>								
<u>2</u>	<u>Reserved</u>							
<u>3</u>	<u>Reserved</u>							
<u>4</u>	<u>TIME-OF-DAY</u>							
<u>11</u>								

The ADDITIONAL LENGTH field indicates the number of bytes that follow in the SET TIME-OF-DAY parameter list.

The TIME-OF-DAY field contains the current time-of-day value to be set to the time-of-day clock. The Time-of-Day (TOD) clock is a binary counter with a 64-bit format. Bit 32 represents a 1 second clock; that is, the TOD is incremented by 1 in bit position 32, once every second. This gives the TOD clock a cycle time of approximately 136 years. If the high order byte is set to any number greater than X'F0', the device server shall return CHECK CONDITION status with the sense key set to ILLEGAL REQUEST and an additional sense code of INVALID FIELD IN PARAMETER LIST.

The default time-of-day setting at power on is 00h, which corresponds to a time of January 1, 1970, 0:00 AM, Greenwich Mean Time (GMT). The TOD clock begins counting relative time from that point.

#### **7.4.7 Control Extension mode page**

The Control Extension mode page (see table 233) is a subpage of the Control mode page (see 7.4.6) provides controls over SCSI features that are applicable to all device types. The mode page policy (see 6.7) for this subpage shall be shared. If a field in this mode subpage is changed while there is a task already in the task set, it is vendor specific whether the old or new value of the field applies to that task.

**TABLE 239. Control Extension mode page**

Byte	7	6	5	4	3	2	1	0
0	PS	SPF (1b)	PAGE CODE (0Ah)					
1	SUBPAGE CODE (01h)							
2	PAGE LENGTH (1Ch)							
3								
4				<a href="#">TODM</a>		<a href="#">TODCP</a>	<a href="#">TODCS</a>	IALUAE
5					INITIAL PRIORITY			
6								
31								

The PS bit, SPF bit, PAGE CODE field, SUBPAGE CODE field, and PAGE LENGTH field are described in 7.4.5.

An implicit asymmetric logical unit access enabled (IALUAE) bit set to one specifies that implicit asymmetric logical unit access state changes (see 5.8.2.7) are allowed. An IALUAE bit set to zero specifies that implicit asymmetric logical unit access state changes be disallowed and indicates that implicit asymmetric logical unit access state changes are disallowed or not supported.

[A time-of-day changeable via SCSI \(TODCS\) bit set to one specifies that the time-of-day clock is changeable via the SET TIME OF DAY and GET TIME OF DAY commands. A TODCS bit set to zero specifies the time-of-day clock is not changeable via the SET TIME OF DAY and GET TIME OF DAY commands.](#)

[A time-of-day changeable via protocol specific methods \(TODCP\) bit set to one specifies that the time-of-day clock is changeable via protocol specific methods. A TODCP bit set to zero specifies that the time-of-day clock is not changeable by protocol specific methods.](#)

[A time-of-day method \(TODM\) field specifies the method to used to set the time-of-day clock. Table x shows the usage of the TODM field.](#)

**TABLE X. TIME-OF-DAY METHOD Field**

<a href="#">Value</a>	<a href="#">Definition</a>
<a href="#">00b</a>	<a href="#">Use internal clock as time-of-day clock</a>
<a href="#">01b</a>	<a href="#">Use last time-of-day setting received by any method</a>
<a href="#">10b</a>	<a href="#">SCSI command method overrides protocol specific method</a>
<a href="#">11b</a>	<a href="#">Protocol specific method overrides SCSI command method</a>

The INITIAL PRIORITY field specifies the priority that may be used as the task priority (see SAM-3) for tasks received in any I\_T\_L nexus where a priority has not been modified by a SET PRIORITY command (see 6.29). If a MODE SELECT command specifies an initial priority value that is different than the current initial priority then the device server shall set any priorities that have not be set with a SET PRIORITY command to a value different than the new initiator

priority value to the new priority. The device server shall generate a unit attention condition for any I\_T\_L nexus that receives a new priority with an additional sense code of PRIORITY CHANGED.