

Predefined structure definitions

D2000 System contains several predefined objects of [Structure definition](#) type.

SD._System_ArchivPerformance

Item name	Description
Name	Name of a process of D2000 Archiv type.
PendingDbRequest	Number of waiting write requests for archive database.
PendingStatRequest	Number of waiting requests for statistical archive.
PerformedDbRequest	Number of performed write requests for archive database per second.
PerformedCalcRequest	Number of performed statistic calculation per second.
TotalItemsInCache	Number of items in internal archive cache.
CacheEffectivity	Cache usage in % (if it is 100% the system does not need to read source data from disk in evaluating statistical historical values - the data are in the memory).
DatabaseSize	Database size [MB].
AutoExtensible	If TRUE, then at least one of the datafiles is able to enlarge (for ORACLE databases only).
FreeSpace	for Sybase: Free disk space for Oracle: Free space in existing datafiles
PendingClearRequest	Number of waiting requests for deleting old data from archive database.
Active	True - the instance of D2000 Archiv is active. False - the instance of D2000 Archiv is not active.
LatestCommand	Description of the last executed command – a database request or statistics evaluation request in the process D2000 Archiv .
DataSize	for Sybase: DataSize = DatabaseSize for Oracle: DataSize = DatabaseSize - FreeSpace
Ready	True - the instance of D2000 Archiv is ready (the initial recalc has been executed). It may become active. False - the instance of D2000 Archiv is not ready.

SD._System_EDAServerPerformance2

Item name	Description
Name	Name of process EDA Server.
DatabaseTaskCount	Number of database connections to DBS Oracle.
WorkerTasksCount	Number of computing threads of EDA Server.
clientsCount	Number of connected clients.
triggersCount	Number of connected triggers.
gcTotalBlocks	Number of pre-allocated data blocks of global cache.
gcTotalVectors	Number of pre-allocated vector definitions of global cache.
gcTotalGroups	Number of pre-allocated group definitions of global cache.
gcTotalScenarios	Number of pre-allocated scenario definitions of global cache.
gcUsedBlocks	Number of used data blocks of global cache.

gcUsedVectors	Number of used vector definitions of global cache.
gcUsedGroups	Number of used group definitions of global cache.
gcUsedScenarios	Number of used scenario definitions of global cache.
ccTotalBlocks	Number of pre-allocated data blocks of client cache.
ccTotalVectors	Number of pre-allocated vector definitions of client cache.
ccTotalGroups	Number of pre-allocated group definitions of client cache.
ccTotalScenarios	Number of pre-allocated scenario definitions of client cache.
ccUsedBlocks	Number of used data block of client cache.
ccUsedVectors	Number of used vector definitions of client cache.
ccUsedGroups	Number of used group definitions of client cache.
ccUsedScenarios	Number of used scenario definitions of client cache.
lpqLength	Length of message queue with a lower priority.
npqLength	Length of message queue with a normal priority.
ipqLength	Length of message queue with an internal priority.
lpqMsgs	Number of processed messages with a lower priority.
lpqAvgWaitTime	Average wait time of message in a queue with a lower priority.
lpqMaxLength	Maximum length of queue with a lower priority.
npqMsgs	Number of processed messages with a normal priority.
npqAvgWaitTime	Average wait time of message in a queue with a normal priority.
npqMaxLength	Maximum length of queue with a normal priority.
ipqMsgs	Number of processed messages with an internal priority.
ipqAvgWaitTime	Average wait time of message in a queue with an internal priority.
ipqMaxLength	Maximum length of queue with an internal priority.
transTime	Time spent on transactions for EDA Server synchronization.
transCount	Number of transactions for EDA Server synchronization.
triggerTransTime	Time spent on transactions for EDA Server synchronization from trigger.
triggerTransCount	Number of transactions for EDA Server synchronization from trigger.
msgProcessingTime	Time spent on processing messages.
processedMsgCount	Number of processed messages.
statementExecTime	Time spent on processing EDA-L commands.
statementExecCount	Number of executed EDA-L commands.
compilationTime	Time spent on of EDA-L compilations.
compilationCount	Number of EDA-L compilations.
descVectorCalcTime	Time spent on calculation of descriptive vectors.
descVectorCalcCount	Number of calculation of descriptive vectors.
archiveTransTime	Time spent on transactions with archive.
archiveTransCount	Number of transactions with archive.
dbTaskRequestWait	Time spent on waiting for trigger.
dbTaskRequestCount	Number of task for trigger.
dbActionsTime	Time spent on database actions.
dbActionsCount	Number of database actions.

sqlActionsTime	Time spent on executing SQL commands.
sqlActionsCount	Number of executed SQL commands.
cCacheMissCount	Number of queries on client cache which do not contain data.
cCacheHitCount	Number of queries on client cache which contains data.
ncCacheFullCount	Number of attempts to write to the full client cache.
cCacheBypassCount	Number of attempts to write to the client cache of entities that have temporary flag "non-cacheable".
cCacheNoncacheableCount	Number of non-cacheable access to the client cache.
gCacheMissCount	Number of queries to global cache, which do not contain data.
gCacheHitCount	Number of queries to global cache, which contains data.
gCacheFullCount	Number of attempts to write to the full global cache.
gCacheBypassCount	Number of attempts to write to the global cache of entities, that have temporary flag "non-cacheable".
gCacheNoncacheableCount	Number of non-cacheable access to global cache.

SD._System_FileInfo

A structure contains the information about the files which have been returned by [FIND_FILES](#) action.

Item name	Description
IsFile	@TRUE - in case of file, @FALSE - in case of directory.
CreateTime	Time when the file or directory was created.
AccessTime	Time of the last access to the file (writing or reading).
ModifyTime	Time of the last file modification.
Size	File size in bytes.
Name	File name.

Attribs

File attributes.
The parameter *Attribs* contains file (directory) attributes, so as they were returned by an operating system. The following table contains the list of the attributes and their values from the file **winnt.h**.

Attribute	Value
FILE_ATTRIBUTE_READONLY	0x00000001
FILE_ATTRIBUTE_HIDDEN	0x00000002
FILE_ATTRIBUTE_SYSTEM	0x00000004
FILE_ATTRIBUTE_DIRECTORY	0x00000010
FILE_ATTRIBUTE_ARCHIVE	0x00000020
FILE_ATTRIBUTE_ENCRYPTED	0x00000040
FILE_ATTRIBUTE_NORMAL	0x00000080
FILE_ATTRIBUTE_TEMPORARY	0x00000100
FILE_ATTRIBUTE_SPARSE_FILE	0x00000200
FILE_ATTRIBUTE_REPARSE_POINT	0x00000400
FILE_ATTRIBUTE_COMPRESSED	0x00000800
FILE_ATTRIBUTE_OFFLINE	0x00001000
FILE_ATTRIBUTE_NOT_CONTENT_INDEXED	0x00002000

SD._System_LinePerformance

Item name	Description
Name	Line name. Name is entered by D2000 system user (configurator) - the name of a line to be tracked.
Status	Line status (True / False).
StatusTime	Relative time from last line status change.
BytesIn	Number of received bits on the line from the start of process D2000 KOM or from the time when the data are set to zero by using the Tell command RESETPERF .
BytesOut	Number of sent bits on the line from the start of process D2000 KOM or from the time when the data are set to zero by using the Tell command RESETPERF .
FramesIn	Number of received datagram / packets on the line from the start of process D2000 KOM or the time when the data are set to zero by using the Tell command RESETPERF .
FramesOut	Number of sent datagrams / packets on the line from the start of process D2000 KOM or the time when the data are set to zero by using the Tell command RESETPERF .
RetryError	Number of datagram request retry error (no response) on the line from the start of process D2000 KOM or the time when the data are set to zero by using the Tell command RESETPERF .
LastErrorTime	Last line error time.
LastErrorText	Last line error report.
Changes	Number of changes of I/O tags on the line that were sent to process D2000 Server during last 10-second period.
ChangesTotal	Total number of changes of I/O tags on the line that were sent to process D2000 Server from the start of process D2000 KOM or the time when the data are set to zero by using the Tell command RESETPERF .
StationsNumber	Number of stations on the line.

SD._System_NetStatus

Item name	Description
IP_Address	IP address to be tested using the PING network service.
Period	PING messages sending period (seconds).
Timeout	Wait time (milliseconds) for device response.
Reset	Setting the parameter to TRUE resets the parameter listed below.
Status	Network status.
StatusTime	Elapsed time of given status.
PktRcv	Number of successfully transferred packets.
PktLost	Number of lost packets.
SuccRatio	Network transfer ratio.
LastPingTime	Time when last message was sent.

SD._System_ObjectInfo

The structure contains the basic information about the objects which have been returned by [LST_CREATE](#) action.

Item name	Description
ID	HOBJ of the object.
Name	Object name.
Desc	Object description.
Type	Object type.
Rows	Number of rows in case of the structured variable, otherwise 0.
Cols	Number of columns in case of the structured variable / structure definition, otherwise 0.
Parent	HOBJ of the parent object.

It is possible to use a structure extended by 2 more columns with their types and meanings:

UUID	Unique object identifier.
ModifyTime	Time of the last modification of the object.

SD._System_Proces

Item name	Description
Name	Name of D2000 system process. In case of instance process the object name must be written with prefix [instNr]_, in which <i>instNr</i> is number of instance. For example [2]_SELF.ARC for the instance archive (instance 2). Note 1: The parameter also allows to define a process running on other server (process D2000 Server) within a redundant system. To define such a process, define the parameter as follows: <i>server_name::process_name</i> (e.g. <i>DS15A::SELF.KOM</i>) Note 2: The parameter is not case sensitive.
ID	Process ID.
Status	Process status.
ComputerName	Name of computer where specified process is running.
ClientType	Type of the connection of specified process to process D2000 Server .

IPAddr1	IP address if specified process is connected with D2000 Server through TCP/IP and DUAL TCP/IP.
CommStatus1 ¹⁾	Status of the connection using the parameter IPAddr1 .
IPAddr2 ¹⁾	IP address of specified process. The parameter is shown if process is connected to D2000 Server through DUAL TCP/IP.
CommStatus2	Status of the connection using the parameter IPAddr2 .
SentMessages	Message count that are sent by D2000 Server to a client.
ReceivedMessages	Message count that are received by D2000 Server from a client.
AllocatedMemory	Size (in bytes) of memory allocated by specified process.
FreeMemory	for Windows: Free memory size of the computer (kilobytes) where specified process is running for OpenVMS: Size of memory (kilobytes) that can be allocated by specified process
CpuLoad	CPU load of specified process.
Active	Indicates whether the instance is active or not. Possible values: • <i>True</i> - process instance is active • <i>False</i> - process instance is inactive
StartTime	Start time of process.
Handles	Number of the process handles.
Threads	Number of the process threads.
SendBytes	Byte count that are sent by D2000 Server to a client.
ClientSendBytes	Byte count that are sent by a client to D2000 Server .
AvailVirtual	The amount of unreserved and uncommitted memory currently in the user-mode portion of the virtual address space of the process, in bytes.
PrivateUsage	The Commit Charge value in bytes for this process. Commit Charge is the total amount of memory that the memory manager has committed for a running process.
ModuleInfo	Structured process information in JSON format. Example: <pre>{ "name": "cli.EVH", "basename": "cli", "ext": "EVH", "descript": "New Process", "state_value": "RUN", "state_ts": "2017-06-02T08:47:25.113Z", "run_counter": 2, "transport": { "type": "SharedMemory", "tls": "None" }, "client_data": { "host_name": "PC1A3", "platform": "w32", "os_info": "", "d2000_version": "BASIC V11.00.053 (A000000000-00) [s150] - DEBUG", "image_path": "C:\\D2000\\D2000_EXE\\bin\\event.exe", "image_ts": "2017-06-02T08:29:48.000Z", "image_size": 67027508, "command_line": "event.exe /Wcli /DW", "log_path": "C:\\D2000\\D2000_EXE\\Log\\", "log_file": "EVH-cli.log" } }</pre>

¹⁾ The variable contains the status of TCP/IP connection. TRUE means that the connection has been established and is active. FALSE means that the connection has not been established or has been already ended. If the client process is connected to D2000 Server via one or several active network components (gateway, router...), the status of connection can, in the specific situations (the fault conditions, physical cut-off the wiring network), acquire this value belatedly by tenth seconds up to several minutes.

SD._System_Redundancy

Item name	Description
Name	Name of server (process D2000 Server) within redundant group.
ComputerName	Name of the computer where specified server is running.
UpTime	Run time of specified server.
Status	Server status in redundancy. For numerical values see table of server states
StatusTime	Elapsed time of specified status.

SD._System_StationPerformance

Item name	Description
Name	Station name. Name is entered by D2000 system user (configurator) - the name of a station to be tracked.
FramesIn	Number of received datagrams / packets on the station from the start of process D2000 KOM or the time when the data are set to zero using the Tell command RESETPERF .
FramesOut	Number of sent datagrams / packets on the station from the start of process D2000 KOM or the time when the data are set to zero using the Tell command RESETPERF .
LastCommunicationActivity	Time of last communication with the station (e.g. data reading time in communication of request / response type).
LastTimeSynchronisation	Time of the real time station synchronisation.
LastErrorTime	Last station error time.
LastErrorText	Last station error report.
Changes	Number of changes of I/O tags on the station that were sent to process D2000 Server during last 10-second period.
ChangesTotal	Total number of changes of I/O tags on the station that were sent to the process D2000 Server from the start of process D2000 KOM or the time when the data are set to zero by using the Tell command RESETPERF .
WaitRequestNumber	Number of station communication requests postponed.
PointsNumber	Number of I/O tags on the station.

SD._System_TCTSPerformance

Item name	Description
Name	Name of process.
ClientsNr	Number of clients.
TotalOutMsg	Total outgoing messages.
TotalInMsg	Total incoming messages.

TotalOutBytes	Total outgoing bytes.
TotalInBytes	Total incoming bytes.
ServletQTotalSize	Servlet queue total size.
ServletQTotalCount	Servlet queue total count.



Related pages:

[Structure definition](#)
[Structured variables](#)