Lifecycle Controller

(LC) Management Profile

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66

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Lifecycle Controller (LC) Management

182 1 Scope

183 The Lifecycle Controller (LC) Management Profile describes the management of the Dell Lifecycle
184 Controller and its configuration attributes. The profile details certificate management and the LC
185 configuration services that are necessary for the LC's proper functionality. The LC configuration attributes
186 are modeled as attribute collections for an individual LC; typically there is one LC per system platform.

187 2 Normative References

188 Refer to the following documents for more information.

189 **NOTE:** For dated references, only the edition cited applies. For undated references, the latest edition of
190 the referenced document (including any amendments) applies.

191 • DMTF DSP1033, *Profile Registration Profile 1.0*

192 • DMTF DSP1061, *BIOS Management Profile 1.0*

193 • *Dell Job Control Profile 1.0.0*

194 • DMTF DSP0004, *CIM Infrastructure Specification 2.3*

195 • *Dell Lifecycle Controller Best Practices Guide 1.0,*
196   *http://en.community.dell.com/techcenter/extras/m/white_papers/20066173.aspx*

197 • *Dell WSMAN Licenses and Privileges 1.0*

198 • ISO/IEC Directives, Part 2, *Rules for the structure and drafting of International Standards*,
199   http://isotc.iso.org/livelink/livelink.exe?func=ll&objId=4230456&objAction=browse&sort=subtype

200 • Unified Modeling Language (UML) from the Open Management Group (OMG),
201   http://www.uml.org

202 • Dell Tech Center MOF Library: http://www.delltechcenter.com/page/DCIM.Library.MOF

203 • Related Managed Object Format (MOF) files:

204   o DCIM_LCAttribute.mof

205   o DCIM_LCElementConformsToProfile.mof

206   o DCIM_LCEnumeration.mof

207   o DCIM_LCRegisteredProfile.mof

208   o DCIM_LCService.mof

209   o DCIM_LCString.mof

210 3 Terms and Definitions

211 For the purposes of this document, the following terms and definitions apply.

3.1

Conditional – Indicates requirements to be followed strictly in order to conform to the document when the specified conditions are met.

3.2

Mandatory – Indicates requirements to be followed strictly in order to conform to the document and from which no deviation is permitted.

3.3

May – Indicates a course of action permissible within the limits of the document.

3.4

Optional – Indicates a course of action permissible within the limits of the document.

3.5

can – Used for statements of possibility and capability, whether material, physical, or causal.

3.6

cannot – Used for statements of possibility and capability, whether material, physical, or causal.

3.7

need not – Indicates a course of action permissible within the limits of the document.

3.8

referencing profile – Indicates a profile that owns the definition of this class and can include a reference to this profile in its "Related Profiles" table.

3.9

shall – Indicates requirements to be followed strictly in order to conform to the document and from which no deviation is permitted.

3.10

shall not – Indicates requirements to be followed strictly in order to conform to the document and from which no deviation is permitted.

3.11

should – Indicates that among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required.

3.12

should not – Indicates that a certain possibility or course of action is deprecated but not prohibited

3.13

FQDD – Fully Qualified Device Descriptor is used to identify a particular component in a system.

3.14

Interop Namespace – Interop Namespace is where instrumentation instantiates classes to advertise its capabilities for client discovery.

3.15

Implementation Namespace – Implementation Namespace is where instrumentation instantiates classes relevant to executing core management tasks.

3.16

ENUMERATE – Refers to WS-MAN `ENUMERATE` operation as described in Section 8.2 of DSP0226_V1.1 and Section 9.1 of DSP0227_V1.0

3.17

GET – Refers to WS-MAN `GET` operation as defined in Section 7.3 of DSP00226_V1.1 and Section 7.1 of DSP0227_V1.0

4   Symbols and Abbreviated Terms

4.1

CIM – Common Information Model

4.2

LC – Lifecycle Controller

4.3

VD – Virtual Disk

5   Synopsis

Profile Name: LC Management

Version: 1.5.0

Organization: DCIM

CIM Schema Version: 2.26 Experimental

269　**Central Class:** DCIM_LCService

270　**Scoping Class:** CIM_ComputerSystem

271　The LC Management Profile extends the management capability of the referencing profiles by adding the
272　capability to describe lifecycle controller (LC) through its attributes. Each DCIM_LCAttribute derived
273　instance represents an LC configuration-related attribute.

274　The DCIM_LCService class shall be the Central Class. The DCIM_ComputerSystem class shall be the
275　Scoping Class. The DCIM_LCService instance shall be the Central Instance. The
276　DCIM_ComputerSystem instance shall be the Scoping Instance.

277　Table 1 identifies profiles that are related to this profile.

278　　　　　　　　　　　　　　　**Table 1 – Related Profiles**

Profile Name	Organization	Version	Relationship
Profile Registration	DCIM	1.0	Reference

279　6　Description

280　The LC Management Profile describes the LC attribute configuration service and the attributes instances
281　that the service manages. The profile also describes the relationship of the LC attribute service to the Dell
282　profile version information.

283　Figure 1 represents the class schema for the Lifecycle Controller (LC) Management. The LC service in a
284　managed system is represented by the instance of the DCIM_LCService class. The LC attributes are
285　represented by the DCIM_LCAttribute class derivation: DCIM_LCEnumeration and DCIM_LCString
286　classes.

287　The LC Management Profile information is represented with the instance of the
288　DCIM_LCRegisteredProfile.

```
                        ┌─────────────────────────────────────┐
                        │     DCIM_LCRegisteredProfile         │
                        ├─────────────────────────────────────┤
                        │                                      │
                        │                                      │
                        └─────────────────────────────────────┘
  root/interop                             │
- - - - - - - - - - - - - - - - - - - - - -│- - - - - - - - - - - - - - - - - - - - -
  root/dcim            DCIM_LCElementConformsToProfile
                        ┌─────────────────────────────────────┐
                        │          DCIM_LCService              │
                        ├─────────────────────────────────────┤
                        │                                      │
                        └─────────────────────────────────────┘
                        ┌─────────────────────────────────────┐
                        │          DCIM_LCAttribute            │
                        ├─────────────────────────────────────┤
                        │                                      │
                        └─────────────────────────────────────┘
        ┌─────────────────────────┐    ┌─────────────────────────┐
        │  DCIM_LCEnumeration      │    │     DCIM_LCString        │
        ├─────────────────────────┤    ├─────────────────────────┤
        │                         │    │                          │
        └─────────────────────────┘    └──────────────────────────┘
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289
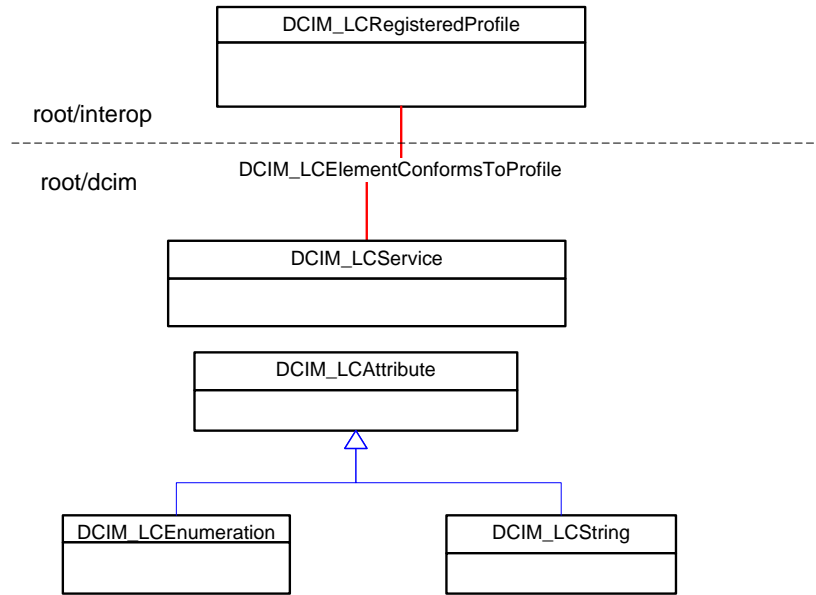
290   **Figure 1 – LC Management Profile: Class Diagram**

291 **7   Implementation Requirements**

292   This section describes the implementation of Dell LC Management.

293   **Table 2 – Class Requirements: Power State Management Profile**

Element Name	Requirement	Description
Classes		
DCIM_LCService	Mandatory	The class shall be implemented in the *Implementation Namespace*. See section 7.1.
DCIM_LCEnumeration	Mandatory	The class shall be implemented in the *Implementation Namespace*. See section 7.2.
DCIM_LCString	Mandatory	The class shall be implemented in the *Implementation Namespace*. See section 7.3.
DCIM_LCElementConformsToProfile	Mandatory	The class shall be implemented in both the *Interop* and *Implementation Namespaces*. See section 7.1 and 7.4.
DCIM_LCRegisteredProfile	Mandatory	The class shall be implemented in the *Interop Namespace*. See section 7.4.
Indications		
None defined in this profile		

294 **7.1   DCIM_LCService**

295   This section describes the implementation for the DCIM_LCService class.

296   This class is instantiated in the Implementation Namespace.

297   The DCIM_LCElementConformsToProfile association's ManagedElement property shall references the
298   DCIM_LCService instance(s).

299 **7.1.1   Resource URIs for WinRM®**

300   The class Resource URI is:

301   *"http://schemas.dell.com/wbem/wscim/1/cim-*
302   *schema/2/DCIM_LCService?__cimnamespace=root/dcim"*

303   The key properties are the SystemCreationClassName, CreationClassName, SystemName, Name

304   The instance Resource URI for DCIM_LCService instance is:

305   *"http://schemas.dell.com/wbem/wscim/1/cim-*
306   *schema/2/DCIM_LCService?__cimnamespace=root/dcim+SystemCreationClassName=DCIM_Com*
307   *puterSystem+SystemName=DCIM:ComputerSystem+CreationClassName=DCIM_LCService+Name*
308   *=DCIM:LCService"*

309 **7.1.2   Operations**

310   The following table lists the operations implemented on DCIM_LCService.

311   **Table 3 – DCIM_LCService - Operations**

Operation Name	Requirements	Required Input
Get	Mandatory	Instance URI
Enumerate	Mandatory	Class URI
Invoke	Mandatory	Instance URI and Method parameters

312

313 **7.1.3   Class Properties**

314   The following table lists the implemented properties for DCIM_LCService instance in a system. The
315   "Requirements" column shall denote whether the property is implemented (for requirement definitions,
316   see section 3.1, 3.2, and 3.4). The "Additional Requirements" column shall denote either possible values
317   for the property, or requirements on the value formulation.

318   **Table 4 – DCIM_LCService - Properties**

Property Name	Type	Requirement	Additional Requirement
CreationClassName	String	Mandatory	The property value shall be "DCIM_LCService"
Name	String	Mandatory	The property value shall be "DCIM:LCService"
ElementName	String	Mandatory	The property value shall be "LC Service"
SystemCreationClassName	String	Mandatory	The property value shall be "DCIM_ComputerSystem"
SystemName	String	Mandatory	The property value shall be "DCIM:ComputerSystem"

7.2 DCIM_LCEnumeration

320 This section describes the implementation for the DCIM_LCEnumeration class.

321 This class shall be instantiated in the Implementation Namespace.

7.2.1 Resource URIs for WinRM®

323 The class Resource URI shall be "http://schemas.dell.com/wbem/wscim/1/cim-
324 schema/2/DCIM_LCEnumeration?__cimnamespace=root/dcim"

325 The key property shall be the InstanceID.

326 The instance Resource URI for DCIM_LCEnumeration instance shall be:
327 "http://schemas.dell.com/wbem/wscim/1/cim-
328 schema/2/DCIM_LCEnumeration?__cimnamespace=root/dcim+InstanceID=<InstanceID>"

7.2.2 Operations

330 The following table lists the operations implemented on DCIM_LCEnumeration.

331 **Table 2 – DCIM_LCEnumeration - Operations**

Operation Name	Requirements	Required Input
Get	Mandatory	Instance URI
Enumerate	Mandatory	Class URI
DCIM_LCService.SetAttributte()	Mandatory	See section 8.1
DCIM_LCService.SetAttributes()	Mandatory	See section 8.2

332

7.2.3 Class Properties

334 The following table lists the implemented properties for DCIM_LCEnumeration instance representing an
335 LC enumeration attribute. The "Requirements" column shall denote whether the property is implemented
336 (for requirement definitions, see section 3). The "Additional Requirement" column shall denote either
337 possible values for the property, or requirements on the value formulation.

338 **Table 3 – Class: DCIM_LCEnumeration**

Properties	Type	Requirement	Additional Requirements
InstanceID	string	Mandatory	The property value shall have a unique value.
AttributeName	String	Mandatory	The property value shall be from the "AttributeName" column in Table 4.
CurrentValue[]	string	Mandatory	The property value shall be one of the values in the "PossibleValues" column at the corresponding row in Table 4.
PendingValue[]	string	Mandatory	The property value shall be one of the values in the "PossibleValues" column at the corresponding row in Table 4.
DefaultValue[]	string	Mandatory	The property value shall represent the default value of the attribute and shall be one of the values in the "PossibleValues" column at the corresponding row in Table 4
IsReadOnly	boolean	Mandatory	The property value shall the value in the "IsReadOnly" column at the corresponding row in Table 4.
ElementName	string	Mandatory	The property value shall be the FQDD of the LC.
PossibleValues[]	string	Mandatory	The property value shall be equal to the array of the values in "PossibleValues" column at the corresponding row in Table 4.

339 The following table describes the requirements for the AttributeName, and PossibleValues properties for
340 the DCIM_LCEnumeration class.
341

Table 4 – DCIM_LCEnumeration Attributes

AttributeName	IsReadOnly	PossibleValues	Description
Licensed	True	• Yes • No	Whether the Component Configuration Recovery feature is licensed.
Part Configuration Update	False	• Disabled • Apply always • Apply only if firmware match	Part cofiguration update method.
Part Firmware Update	False	• Disable • Allow version upgrade only • Match firmware of replaced part	• Disable (default) – firmware update is not allowed. • Allow version upgrade only – Allow firmware update only on up-revision. • Match firmware of replaced part – Always update firmware.
Collect System Inventory on Restart	False	• Disabled • Enabled	• Enabled (default) – Enable collecting system inventory on restart • Disabled – Disable collecting inventory on restart
Auto Discovery	True	• On • Off	• Whether Auto Discovery feature is turned on or off.
Discovery Factory Defaults	True	• On • Off	• Off (default) – Do not reset to factory defaults when performing auto discovery • On – Reset to factory defaults when performing auto discovery.
IPChangeNotifyPS	False	• On • Off	• On – Notify provisioning server of an IP change. • Off – Do not notify provisioning server of an IP change.
VirtualAddressManagement	False	• Console • FlexAddress	• Console – Console manages the virtual addresses • FlexAddress – (Blade only) Virtual addresses are managed through the flex addressing. Note: If this attribute is configured through console, see to section "Setting virtual address attributes on CNA" in Simple NIC Profile.
LifecycleControllerState	False	• Enabled • Disabled • Recovery	Enabled (Default) The LC core services shall be enabled to enable the update and inventory collection features.

343 ## 7.3 DCIM_LCString

344 This section describes the implementation for the DCIM_LCString class.

345 This class shall be instantiated in the Implementation Namespace.

7.3.1 Resource URIs for WinRM®

347 The class Resource URI shall be "http://schemas.dell.com/wbem/wscim/1/cim-
348 schema/2/DCIM_LCString?__cimnamespace=root/dcim"

349 The key property shall be the InstanceID.

350 The instance Resource URI for DCIM_LCString instance shall be:
351 "http://schemas.dell.com/wbem/wscim/1/cim-
352 schema/2/DCIM_LCString?__cimnamespace=root/dcim+InstanceID=<InstanceID>"

7.3.2 Operations

354 The following table details the implemented operations on DCIM_LCString.

355 **Table 5 – DCIM_LCString - Operations**

Operation Name	Requirements	Required Input
Get	Mandatory	Instance URI
Enumerate	Mandatory	Class URI
DCIM_LCService.SetAttributte()	Mandatory	See section 8.1
DCIM_LCService.SetAttributes()	Mandatory	See section 8.2

7.3.3 Class Properties

357 The following table lists the implemented properties for DCIM_LCString instance representing an LC
358 string attribute. The "Requirements" column shall denote whether the property is implemented (for
359 requirement definitions, see section 3). The "Additional Requirement" column shall denote either possible
360 values for the property, or requirements on the value formulation.

361   **Table 6 – Class: DCIM_LCString**

Properties	Type	Requirement	Additional Requirements
InstanceID	string	Mandatory	The property value shall have unique value.
AttributeName	string	Mandatory	The property value shall be from the "AttributeName" column in Table 7.
CurrentValue[]	string	Mandatory	The property shall represent the current value of the attribute.
PendingValue[]	string	Mandatory	The property value shall represent the pending value of the attribute.
DefaultValue[]	string	Mandatory	The property value shall represent the default value of the attribute.
IsReadOnly	boolean	Mandatory	The property value shall be the value in the "IsReadOnly" column at the corresponding row in Table 7.
ElementName	string	Mandatory	The property value shall be the FQDD of the LC.
MinLength	uint64	Mandatory	The property value shall be the value in the "MinLength" column at the corresponding row in Table 7. The CurrentValue and PendingValue shall have equal or higher number of characters than the MinLength property value from the corresponding row. The omission or NULL shall denote that no known constraint exists on the CurrentValue and PendingValue properties.
MaxLength	uint64	Mandatory	The property value shall be the value in the "MaxLength" column at the corresponding row in Table 7. The CurrentValue and PendingValue shall have equal or lower number of characters than the MaxLength property value. The omission or NULL shall denote that no known constraint exists on the CurrentValue and PendingValue properties.

362   The following table describes possible DCIM_LCString attributes and the requirements for the
363   AttributeName, MinLength, and MaxLength properties. The column headers represent the properties of
364   the DCIM_ LCString class. Each of the cells represents the values of the properties.

365   •

366   **Table 7 – DCIM_LCString Attributes**

AttributeName	IsRead Only	MinLength	MaxLength	Description

AttributeName	IsRead Only	MinLength	MaxLength	Description
SYSID	TRUE	N/A	N/A	Dell System ID.
Provisioning Server	FALSE	0	255	Provisioning server address and port. Attribute value examples: • Hostname • hostname.domain.com • 1.1.1.1 • Mypc:8080 • Myps.dell.com(1.2.3.4):8080 • Host1:80,host2:8080, • Hostname[2001:db8:0000:1428:57ab]:443 [2001:db8:0000:1428:57ab]:443
VirtualAddressManagement Application*	FALSE*	0	32	The console name of the Virtual Address Management Application, if the DCIM_LCEnumeration VirtualAddressManagement attribute is set to CurrentValue equals "Console".

367   * - Note that VirtualAddressMangementApplication attribute is settable only if the
368   VirtualAddressManagement DCIM_LCEnumeration instance's CurrentValue is set to "Console".

369   ## 7.4   Lifecycle Controller (LC) Management   Registration – DCIM_LCRegistered
370   Profile

371   This section describes the implementation for the DCIM_LCRegisteredProfile class.

372   This class shall be instantiated in the Interop Namespace.

373   The DCIM_LCElementConformsToProfile association(s)' ConformantStandard property shall reference
374   the DCIM_LCRegisteredProfile instance.

375   ### 7.4.1   Resource URIs for WinRM®

376   The class WBEM URI shall be "http://schemas.dmtf.org/wbem/wscim/1/cim-
377   schema/2/CIM_RegisteredProfile?__cimnamespace=root/interop"

378   The key property shall be the InstanceID property.

379   The instance WBEM URI shall be: "http://schemas.dell.com/wbem/wscim/1/cim-
380   schema/2/DCIM_LCRegisteredProfile?__cimnamespace=root/interop+InstanceID=
381   DCIM:LCManagement:1.1.0"

382   ### 7.4.2   Operations

383   The following table lists the operations implemented on DCIM_LCRegisteredProfile.

384   **Table 8 – DCIM_LCRegisteredProfile - Operations**

Operation Name	Requirements	Required Input

Get	Mandatory	Instance URI	
Enumerate	Mandatory	Class URI	

385

7.4.3 Class Properties

387 The following table details the properties implemented for the DCIM_LCRegisteredProfile instance
388 representing Lifecycle Controller (LC) Management implementation. The "Requirements" column shall
389 denote whether the property is implemented (for requirement definitions, see section 3). The "Additional
390 Requirements" column shall denote either possible values for the property, or requirements on the value
391 formulation.

392 **Table 9 – Class: DCIM_LCRegisteredProfile**

Properties	Type	Requirement	Additional Requirements
InstanceID	string	Mandatory	This property shall have a value of "DCIM:LCManagement:1.1.0"
RegisteredName	string	Mandatory	This property shall have a value of "LC Management".
RegisteredVersion	string	Mandatory	This property shall have a value of "1.5.0".
RegisteredOrganization	uint16	Mandatory	This property shall have a value of 1 (Other).
OtherRegisteredOrganization	string	Mandatory	This property shall match "DCIM"
AdvertiseTypes[]	uint16	Mandatory	This property array shall have values "1(Other)" and "1(Other)"
AdvertiseTypeDescriptions[]	string	Mandatory	This property array shall have values "WS-Identify" and "Interop Namespace"
ProfileRequireLicense[]	string	Mandatory	This property array shall describe the required licenses for this profile. If no license is required for the profile, the property shall have value NULL.
ProfileRequireLicenseStatus[]	string	Mandatory	This property array shall contain the status for the corresponding license in the same element index of the ProfileRequireLicense array property. Each array element shall contain: • "LICENSED" • "NOT_LICENSED" If no license is required for the profile, the property shall have value NULL.

393

8 Methods

395 This section details the requirements for supporting intrinsic operations and extrinsic methods for the CIM
396 elements defined by this profile.

8.1 DCIM_LCService.SetAttribute()

398 The SetAttribute( ) method is used to set or change the value of an LC attribute.

399 Invoking the SetAttribute( ) method shall change the value of the DCIM_LCAttribute.CurrentValue or
400 DCIM_LCAttribute.PendingValue property to the value specified by the AttributeValue parameter if the
401 DCIM_LCAttribute.IsReadOnly property is FALSE. Invoking this method when the
402 DCIM_LCAttribute.IsReadOnly property is TRUE shall result in no change to the value of the
403 DCIM_LCAttribute.CurrentValue property. The results of changing this value is described with the
404 SetResult parameter.

405 Return code values for the SetAttribute( ) method are specified in Table 10 and parameters are specified
406 in Table 11.

407 **NOTE:** Invoking the SetAttribute( ) method multiple times can result in the earlier requests being
408 overwritten or lost.

409 **Table 10 – DCIM_LCService.SetAttribute() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
2	Error occurred

410 **Table 11 – DCIM_LCService.SetAttribute() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, REQ	AttributeName	string	DCIM_LCAttribute.AttributeName
IN, REQ	AttributeValue[]	string	Pending or Current value to be set.
OUT	SetResult	string	Invoking the SetAttribute may result in the CurrentValue or PendingValue property being set. A value of: • "Set CurrentValue" means CurrentValue property is set. • "Set PendingValue" means PendingValue property is set.
OUT	RebootRequired	string	A value of • "Yes" means a reboot is required to set this value. • "No" means a reboot is not required to set this value.
OUT	MessageID	string	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	string	Error Message in English corresponding to MessageID is returned if the method fails to execute.
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages.

411

412

Table 12 – DCIM_LCService.SetAttribute() Method: Standard Messages

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	NA
LC003	Failed to change the FW Update mode	NA
LC004	PS info not formatted correctly	NA
LC005	Invalid FW update mode	NA
LC007	Invalid parameter	NA
LC008	Unsupported method parameter value	NA
LC012	Lifecycle Controller is being used by another process	NA
LC015	Invalid Part Configuration Update	NA
LC016	Missing required parameter	<parameter>
LC036	System Services is disabled	NA
LC041	Virtual Address Mgmt file error	NA
LC042	Virtual Address Mgmt using FlexAddr	NA
LC048	Invalid value of IPChangeNotifyPS	NA
LC049	Invalid value of VirtualAddressManagement	NA
LC057	Invalid AttributeName.	NA
LC058	Invalid AttributeValue for AttributeName.	<parameter>
LC059	Cannot set ReadOnly AttributeName.	<parameter>

413

414 **8.2   DCIM_LCService.SetAttributes()**

415   The SetAttributes( ) method is used to set or change the values of a group of attributes.

416   Invoking the SetAttributes( ) method shall change the values of the DCIM_LCAttribute.CurrentValue or
417   PendingValue properties that correspond to the names specified by the AttributeName parameter and the
418   values specified by the AttributeValue parameter if the respective DCIM_LCAttribute.IsReadOnly property
419   is FALSE. Invoking the method when the respective DCIM_LCAttribute.IsReadOnly property is TRUE
420   shall result in no change to the corresponding value of the DCIM_LCAttribute.CurrentValue property.

421   Return code values for the SetAttributes( ) method are specified in Table 13, and parameters are
422   specified in Table 14.

423   **NOTE:** Invoking the SetAttributes( ) method multiple times can result in the earlier requests being
424   overwritten or lost.

Table 13 – DCIM_LCService.SetAttributes() Method: Return Code Values

Value	Description
0	Request was successfully executed.
2	Error occurred

Table 14 – DCIM_LCService.SetAttributes() Method: Parameters

Qualifiers	Name	Type	Description/Values
IN, REQ	AttributeName[]	string	The array parameter shall contain the AttributeName property values for the attributes to be modified.
IN, REQ	AttributeValue[]	string	The array parameter shall contain the desired attribute values at the corresponding array element with the attribute name in the AttributeName array parameter. For example, if there are two attributes in the AttributeName array: AttributeName1 and AttributeName2, the array index 1 shall contain the value for AttributeName1 and array index 2 shall contain the value for AttributeName2. Attributes with array values shall not be set using this method, rather the SetAttribute() method shall be used to set the array attributes one at a time.. If the value is valid, the CurrentValue or PendingValue property of the specified attribute shall be modified.
OUT	SetResult[]	string	Invoking the SetAttributes may result in the CurrentValue or PendingValue property of each input element being set. AttributeValue array shall have a corresponding SetResult value in the SetResult array. A return value of: • "Set CurrentValue" means CurrentValue property is set. • "Set PendingValue" means PendingValue property is set.
OUT	RebootRequired[]	string	Each input element's AttributeValue array shall have a corresponding RebootRequired value in the RebootRequired array. A value of: • "Yes" means a reboot is required to set this value. • "No" means a reboot is not required to set this value
OUT	MessageID[]	string	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message[]	string	Error Message in English corresponding to MessageID is returned if the method fails to execute

Qualifiers	Name	Type	Description/Values
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

427   **Table 15 – DCIM_LCService.SetAttributes() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	NA
LC003	Failed to change the FW Update mode	NA
LC004	PS info not formatted correctly	NA
LC005	Invalid FW update mode	NA
LC007	Invalid parameter	NA
LC008	Unsupported method parameter value	NA
LC012	Lifecycle Controller is being used by another process	NA
LC015	Invalid Part Configuration Update	NA
LC016	Missing required parameter	<parameter>
LC036	System Services is disabled	NA
LC041	Virtual Address Mgmt file error	NA
LC042	Virtual Address Mgmt using FlexAddr	NA
LC048	Invalid value of IPChangeNotifyPS	NA
LC049	Invalid value of VirtualAddressManagement	NA
LC057	Invalid AttributeName.	NA
LC058	Invalid AttributeValue for AttributeName.	<parameter>
LC059	Cannot set ReadOnly AttributeName.	<parameter>

428

429   **8.3   DCIM_LCService.CreateConfigJob()**

430   The CreateConfigJob( ) method is used to apply the pending values created by the SetAttribute and
431   SetAttributes methods. The successful execution of this method creates a job for application of pending
432   attribute values.

433   Return code values for the CreateConfigJob( ) method are specified in Table 16, and parameters are
434   specified in Table 17.

435   **NOTE:** Subsequent calls to CreateConfigJob after the first CreateConfigJob will result in error until the
436   first job is completed.

437

Table 16 – DCIM_LCService.CreateConfigJob() Method: Return Code Values

Value	Description
2	Error occurred
4096	Job started: REF returned to started CIM_ConcreteJob

438

Table 17 – DCIM_LCService.CreateConfigJob() Method: Parameters

Qualifiers	Name	Type	Description/Values
OUT	Job	CIM_ConcreteJob REF	Returned to keep track of config job status[1]
OUT	MessageID	string	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	string	Error Message in English corresponding to MessageID is returned if the method fails to execute
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

439

440

Table 18 – DCIM_LCService.CreateConfigJob() Method: Standard Messages

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	
LC012	Lifecycle Controller is being used by another process	NA
LC013	There are no pending values to set	NA
LC045	An instance of CreateConfigJob is already running	NA
JCP017	Maximum job limit reached, cannot create new jobs	NA
JCP018	Backup Job is running, cannot create new jobs until the existing Backup job is completed or is cancelled	NA
JCP019	Restore Job is running, cannot create new jobs until the existing Restore job is completed or is cancelled	NA

441

8.4 DCIM_LCService.ReInitiateDHS()

443 The ReInitiateDHS() method is used to reinitiate the provisioning server discovery and handshake.

444

Table 19 – DCIM_LCService.ReInitiateDHS() Method: Return Code Values

Value	Description
0	Request was successfully executed.
2	Error occurred

445

Table 20 – DCIM_LCService.ReInitiateDHS() Method: Parameters

Qualifiers	Name	Type	Description/Values
IN	ProvisioningServer	string	An optional parameter to specify provisioning server addresses and ports used for auto discovery. If omitted, the Lifecycle Controller shall get the value from DHCP or DNS.
IN, REQ	ResetToFactoryDefaults	boolean	If set to "true", all configuration information is replaced with the auto discovery factory defaults. If set to "false", an error will be returned
IN, REQ	PerformAutoDiscovery	uint16	• A value of "Off = 1" disables auto discovery. • A value of "Now = 2" enables and initiates auto discovery immediately. • A value of "NextBoot = 3" will delay reconfiguration and auto discovery until next powercycle. NOTE: If NextBoot has value 3, then upon successful execution, the Discovery Factory Defaults attribute shall be set to "On".
OUT	MessageID	string	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	string	Error Message in English corresponding to MessageID is returned if the method fails to execute
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

446

Table 21 – DCIM_LCService.ReInitiateDHS() Method: Standard Messages

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	NA
LC004	PS info not formatted correctly	NA
LC008	Unsupported method parameter value	NA
LC009	Insufficient method parameters	NA

447

8.5   DCIM_LCService.ClearProvisioningServer()

The ClearProvisioningServer() method is used to clear the provisioning server values.

Table 22 – DCIM_LCService.ClearProvisioningServer() Method: Return Code Values

Value	Description
0	Request was successfully executed.
2	Error occurred

Table 23 – DCIM_LCService.ClearProvisioningServer() Method: Parameters

Qualifiers	Name	Type	Description/Values
OUT	MessageID	string	Error MessageID is returned if the method fails to execute
OUT	Message	string	Error Message in English corresponding to MessageID is returned if the method fails to execute
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

Table 24 – DCIM_LCService.ClearProvisioningServer() Method: Standard Messages

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	

8.6   DCIM_LCService.DownloadServerPublicKey()

The DownloadServerPublicKey() method is used to set a public certificate in the chain of trust for provisioning server. The successful invocation of this method shall set the certificate inside the KeyContent parameter to the iDRAC trusted Root CA list. The certificate will be used to authenticate the provisioning server access to iDRAC.

Table 25 – DCIM_LCService.DownloadServerPublicKey() Method: Return Code Values

Value	Description
2	Error occurred
4096	Job started

Table 26 – DCIM_LCService.DownloadServerPublicKey() Method: Parameters

Qualifiers	Name	Type	Description/Values
IN, OctetString, REQ	KeyContent	string	Base64 encoded public CA certificate.

Qualifiers	Name	Type	Description/Values
OUT	Job	CIM_ConcreteJob REF	Returned to track the setting of the public key.
OUT	MessageID	string	Error Message ID can be used to index into Dell Message registry files.
OUT	Message	string	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages.

460

461 **Table 27 – DCIM_LCService.DownloadServerPublicKey() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	NA
LC016	Missing required parameter	<parameter>
LC017	Invalid value of parameter	<parameter>
LC040	Resource Allocation Failure	
LC046	An instance of DownloadServerPublicKey is already running	
JCP017	Maximum job limit reached, cannot create new jobs	
JCP018	Backup Job is running, cannot create new jobs until the existing Backup job is completed or is cancelled	
JCP019	Restore Job is running, cannot create new jobs until the existing Restore job is completed or is cancelled	NA

462

463 **8.7 DCIM_LCService.DownloadClientCerts()**

464 DCIM_LCService.DownloadClientCerts() is used to copy a CA cert and private key to the iDRAC to sign
465 the iDRAC certificate. When this command is issued the iDRAC will generate a new auto-discovery client
466 certificate and sign it using the CA cert and private key. The CA cert then needs to be added to the
467 provisioning server trusted Root CA list before performing auto-discovery.

468 **Table 28 – DCIM_LCService.DownloadClientCerts() Method: Return Code Values**

Value	Description
2	Error occurred
4096	Job started

469 **Table 29 – DCIM_LCService.DownloadClientCerts() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, OctetString, REQ	KeyContent	string	Base64 encoded private key content.
IN, REQ	Password	string	Private key password.
IN, OctetString, REQ	CAContent	string	Base64 encoded root certificate content.
OUT	Job	CIM_ConcreteJob REF	Returned to track the setting of the public key.
OUT	MessageID	string	Error Message ID can be used to index into Dell Message registry files.
OUT	Message	string	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages.

470 **Table 30 – DCIM_LCService.DownloadClientCerts() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	NA
LC016	Missing required parameter	<parameter>
LC017	Invalid value of parameter	<parameter>
LC040	Resource Allocation Failure	
LC047	An instance of DownloadClientCerts is already running	
JCP017	Maximum job limit reached, cannot create new jobs	
JCP018	Backup Job is running, cannot create new jobs until the existing Backup job is completed or is cancelled	
JCP019	Restore Job is running, cannot create new jobs until the existing Restore job is completed or is cancelled	NA

471

472 **8.8 DCIM_LCService.DeleteAutoDiscoveryClientCerts ()**

473 The DeleteAutoDiscoveryClientCerts() method is used to wipe all configurations from the Lifecycle
474 controller before the system is retired.

475 **Table 31 – DCIM_LCService.DeleteAutoDiscoveryClientCerts() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
2	Error occurred

476 **Table 32 – DCIM_LCService.DeleteAutoDiscoveryClientCerts() Method: Parameters**

Qualifiers	Name	Type	Description/Values
OUT	MessageID	string	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	string	Error Message in English corresponding to MessageID is returned if the method fails to execute
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

477 **Table 33 – DCIM_LCService.DeleteAutoDiscoveryClientCerts() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	

478

479 8.9 DCIM_LCService.SetCertificateAndPrivateKey()

480 The SetCertificateAndPrivateKey() method is used to set iDRAC owned server certificate and public and
481 private key pairs using the contents of a PKCS#12 file. iDRAC will serve the certificate to identify itself
482 during web server based connections such as for iDRAC's web application and WSMan instrumentation
483 connections. The certificate will also be served for connections with directory services.

484 **Table 34 – DCIM_LCService.SetCertificateAndPrivateKey() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
2	Error occurred

485 **Table 35 – DCIM_LCService.SetCertificateAndPrivateKey() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, REQ	Type	string	This parameter specifies the certificate use. **Note: The parameter shall have "server" value.**
IN, REQ	PKCS12	string	An input parameter that represents the Base64 encoded contents of PKCS#12 file to set. Note this is the content of the file and not a file name.
IN, REQ	PKCS12pin	string	Password to decode the PKCS12.
OUT	MessageID	String	Error Message ID can be used to index into Dell Message registry files.
OUT	Message	String	Error Message in English corresponding to MessageID is returned if the method fails to execute.
OUT	MessageArguments[]	String	Substitution variables for dynamic error messages.

486 **Table 36 – DCIM_LCService.SetCertificateAndPrivateKey() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	
LC016	Missing required parameter	"Type", "PKCS12","PKCS12pin"
LC017	Invalid value of parameter	"Type", "PKCS12","PKCS12pin"

487
488

489 8.10 DCIM_LCService.SetPublicCertificate()

490 The SetPublicCertificate() method is used to set a public certificate in the chain of trust for directory
491 services. The successful invocation of this method shall set the certificate inside the Certificate parameter
492 to the iDRAC trusted Root CA list. The certificate will be used to authenticate the directory service access
493 to iDRAC.

494 **Table 37 – DCIM_LCService.SetPublicCertificate() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
2	Error occurred

495 **Table 38 – DCIM_LCService.SetPublicCertificate() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, REQ	Type	string	This parameter specifies the service the certificate is for. "directoryCA" = CA certificate for Active Directory or LDAP server
IN, REQ	Certificate	string	An input parameter that represents the certificate to set. The certificate must be in X509 format and Base64 encoded.
OUT	MessageID	string	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	string	Error Message in English corresponding to MessageID is returned if the method fails to execute
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

496 **Table 39 – DCIM_LCService.SetPublicCertificate() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	
LC016	Missing required parameter %s	"Type", "Certificate"
LC017	Invalid value of parameter %s	"Type", "Certificate"

497 8.11 DCIM_LCService.DeleteAutoDiscoveryServerPublicKey()

498 The DeleteAutoDiscoveryServerPublicKey() method is used to delete the server public key set previously
499 by the auto discovery method.

500   **Table 40 – DCIM_LCService.DeleteAutoDiscoveryServerPublicKey() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
2	Error occurred

501   **Table 41 – DCIM_LCService.DeleteAutoDiscoveryServerPublicKey() Method: Parameters**

Qualifiers	Name	Type	Description/Values
OUT	MessageID	String	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	String	Error Message in English corresponding to MessageID is returned if the method fails to execute
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

502   **Table 42 – DCIM_LCService.DeleteAutoDiscoveryServerPublicKey() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	

503

504   **8.12   DCIM_LCService.InsertCommentInLCLog()**

505   The InsertCommentInLCLog() method is used to insert additional user comments into the Lifecycle
506   Controller log.

507   **Table 43 – DCIM_LCService.InsertCommentInLCLog() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
2	Error occurred

508   **Table 44 – DCIM_LCService.InsertCommentInLCLog() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, REQ	Comment	string	This parameter holds the text that shall be inserted into the LC log Comment field.
OUT	MessageID	string	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	string	Error Message in English corresponding to MessageID is returned if the method fails to execute
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

509

510

511

Table 45 – DCIM_LCService.InsertCommentInLCLog() Method: Standard Messages

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	
LC008	Unsupported method parameter value	
LC014	Comment length must be between 1 and 255 characters	

8.13 DCIM_LCService.ExportLCLog()

513 The ExportLCLog() method is used to export the log from the Lifecycle Controller to a remote share.

514

Table 46 – DCIM_LCService.ExportLCLog() Method: Return Code Values

Value	Description
2	Error occurred
4096	Job started: REF returned to started CIM_ConcreteJob

515

Table 47 – DCIM_LCService.ExportLCLog() Method: Parameters

Qualifiers	Name	Type	Description/Values
IN, REQ	IPAddress	string	The IP address of the target export server.
IN, REQ	ShareName	string	The directory path to the mount point.
IN, REQ	FileName	string	The target output file name.
IN, REQ	ShareType	uint16	Type of share: NFS=0, CIFS=2
IN	Username	String	User name for the target export server.
IN	Password	String	Password for the target export server.
IN	Workgroup	String	The applicable workgroup.
OUT	Job	CIM_ConcreteJob REF	[1] Returned to keep track of config job status[1].
OUT	MessageID	String	Error Message ID- can be used to index into Dell Message registry files.
OUT	Message	String	Error Message in English corresponding to MessageID is returned if the method fails to execute.
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages.

516

517

518 **Table 48 – DCIM_LCService.ExportLCLog() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC022	LCL Export was successful	
LC023	Cannot access network share	
LC030	Filepath is a read-only file system	
LC037	An instance of LCExport is already running	
LC040	Resource Allocation Failure	
JCP017	Maximum job limit reached, cannot create new jobs	
JCP018	Backup Job is running, cannot create new jobs until the existing Backup job is completed or is cancelled	
JCP019	Restore Job is running, cannot create new jobs until the existing Restore job is completed or is cancelled	NA

519

520 **8.14 DCIM_LCService.ExportHWInventory()**

521 The ExportHWInventory() method is used to export the hardware inventory from the Lifecycle Controller
522 to a remote share.

523 **Table 49 – DCIM_LCService.ExportHWInventory() Method: Return Code Values**

Value	Description
2	Error occurred
4096	Job started: REF returned to started CIM_ConcreteJob

524 **Table 50 – DCIM_LCService.ExportHWInventory() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, REQ	IPAddress	string	The IP address of the target export server.
IN. REQ	ShareName	string	The directory path to the mount point.
IN, REQ	FileName	string	The target output file name.
IN, REQ	ShareType	uint16	Type of share: NFS=0, CIFS=2
IN	Username	String	User name for the target export server.
IN	Password	String	Password for the target export server.
IN	Workgroup	String	The applicable workgroup.
OUT	Job	CIM_ConcreteJob REF	Returned to keep track of config job status[1]
OUT	MessageID	String	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	String	Error Message in English corresponding to MessageID is returned if the method fails to execute.
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages.

525

526

527 **Table 51 – DCIM_LCService.ExportHWInventory() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC023	Cannot access network share	LC023
LC025	Insufficient space on network share	LC025
LC027	Hardware Inventory Export was successful	LC027
LC029	Filepath is invalid	LC029
LC030	Filepath is a read-only file system	LC030
LC038	An instance of Hardware Inventory is already running	LC038
LC040	Resource Allocation Failure	LC040
JCP017	Maximum job limit reached, cannot create new jobs	JCP017

MessageID (OUT parameter)	Message	MessageArguments[]
JCP018	Backup Job is running, cannot create new jobs until the existing Backup job is completed or is cancelled	JCP018
JCP019	Restore Job is running, cannot create new jobs until the existing Restore job is completed or is cancelled	NA

528

529 8.15 DCIM_LCService.ExportFactoryConfiguration()

530 The ExportFactoryConfiguration() method is used to export the factory configuration from the Lifecycle
531 Controller to a remote share.

532 **Table 52 – DCIM_LCService.ExportFactoryConfiguration() Method: Return Code Values**

Value	Description
2	Error occurred
4096	Job started: REF returned to started CIM_ConcreteJob

533 **Table 53 – DCIM_LCService.ExportFactoryConfiguration() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, REQ	IPAddress	string	The IP address of the target export server.
IN, REQ	ShareName	string	The directory path to the mount point.
IN, REQ	FileName	string	The target output file name.
IN, REQ	ShareType	uint16	Type of share: NFS=0, CIFS=2
IN	Username	String	User name for the target export server.
IN	Password	String	Password for the target export server.
IN	Workgroup	String	The applicable workgroup.
OUT	Job	CIM_ConcreteJob REF	Returned to keep track of config job status.
OUT	MessageID	String	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	String	Error Message in English corresponding to MessageID is returned if the method fails to execute.
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages.

534 **Table 54 – DCIM_LCService.ExportFactoryConfiguration() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC023	Cannot access network share	

MessageID (OUT parameter)	Message	MessageArguments[]
LC025	Insufficient space on network share	
LC029	Filepath is invalid	
LC030	Filepath is a read-only file system	
LC033	Factory Configuration Export was successful	
LC034	Factory Configuration was not found on the system	
LC039	An instance of Factory Configuration is already running	
LC040	Resource Allocation Failure	
JCP017	Maximum job limit reached, cannot create new jobs	
JCP018	Backup Job is running, cannot create new jobs until the existing Backup job is completed or is cancelled	
JCP019	Restore Job is running, cannot create new jobs until the existing Restore job is completed or is cancelled	NA

535

8.16 DCIM_LCService.LCWipe()

537 This LCWipe() method is used to delete all configurations from the Lifecycle controller before the system
538 is retired.

539

540 **Table 55 – DCIM_LCService.LCWipe() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
2	Error occurred

541 **Table 56 – DCIM_LCService.LCWipe() Method: Parameters**

Qualifiers	Name	Type	Description/Values
OUT	MessageID	String	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	String	Error Message in English corresponding to MessageID is returned if the method fails to execute
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

542 **Table 57 – – DCIM_LCService.LCWipe() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC012	Lifecycle Controller is being used by another process	
LC044	An instance of LCWipe is already running	

8.17 DCIM_LCService.BackupImage()

544 The BackupImage() method is used to backup firmware and configurations for the Lifecycle Controller.

545 **Table 58 – DCIM_LCService.BackupImage() Method: Return Code Values**

Value	Description
2	Error occurred
4096[1]	A DCIM_ConcreteJob is returned[1]

Table 59 – DCIM_LCService.BackupImage() Method: Parameters

Qualifiers	Name	Type	Description/Values
IN	IPAddress	String	IP address of the NFS or CIFS share such as 192.168.10.12. The parameter shall be required, if the ShareType parameter has value 0 (NFS), 2 (CIFS), or not specified.
IN	ShareName	String	Share name for the network share such as "imageshare". The parameter shall be required, if the ShareType parameter has value 0 (NFS), 2 (CIFS), or not specified.
IN	ShareType	Unit16	Type of the share or storage. • 0 – NFS • 2 – CIFS • 4 – VFLASH If ShareType is blank or null, it shall be considered as NFS type. The parameter shall be required, if the ShareType parameter has value 0 (NFS), 2 (CIFS), or not specified.
IN	Passphrase	String	The passphrase for the image. The parameter shall be required, if the ShareType parameter has value 0 (NFS), or 2 (CIFS) or not specified.
IN	ImageName	String	The name of the backup file. The parameter shall be required, if the ShareType parameter has value 0 (NFS), 2 (CIFS), or not specified.
IN	Username	String	User name for the remote share
IN	Password	String	Password for the remote share
IN	Workgroup	String	Workgroup for the share
IN	ScheduledStartTime	String	The scheduled start time
IN	UntilTime	String	The maintenance time. Job will not run passing this window.
OUT	MessageID	String	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Job	DCIM_ConcreteJob Ref	The job that represents this operation[1]
OUT	Message	String	Error Message in English corresponding to MessageID is returned if the method fails to execute
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

547 NOTE: 1 – If return code is 4096 (Job Created), the newly created job will not execute if the LC core services are not
548 running (DCIM_LCEnumeration with AttributeName equal to "LifecycleControllerState" has the CurrentValue property
549 equal to "Disabled").

550

Table 60 – DCIM_LCService.BackupImage() Method: Standard Messages

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	
LC017	Invalid value of parameter	"ShareType"
LC023	Cannot access network share	NA
LC051	Cannot create multiple Export jobs.	NA
SUP017	Invalid start time.	
SUP018	Invalid until time.	
JCP017	Maximum job limit reached, cannot create new jobs	
JCP019	Restore Job is running, cannot create new jobs until the existing Restore job is completed or is cancelled	
JCP018	Backup Job is running, cannot create new jobs until the existing Backup job is completed or is cancelled	

551

552   **8.18 DCIM_LCService.RestoreImage()**

553   This RestoreImage() method is used to restore firmware and configurations.

Table 61 – DCIM_LCService.RestoreImage() Method: Return Code Values

Value	Description
2	Error occurred
4096[1]	A DCIM_ConcreteJob is returned[1]

Table 62 – DCIM_LCService.RestoreImage() Method: Parameters

Qualifiers	Name	Type	Description/Values
IN	IPAddress	String	IP address of the NFS or CIFS share. The parameter shall be required, if the ShareType parameter has value 0 (NFS), 2 (CIFS), or not specified.
IN.	ShareName	String	Share name for the network share, The parameter shall be required, if the ShareType parameter has value 0 (NFS), 2 (CIFS), or not specified.
IN	ShareType	Uint16	Type of the share or storage. • 0 – NFS • 2 – CIFS • 4 – VFLASH If ShareType is blank or null, it shall be considered as NFS type
IN	Passphrase	String	The passphrase for the image. The parameter shall be required, if the ShareType parameter has value 0 (NFS), 2 (CIFS), or not specified.
IN	ImageName	String	The name of the backup file. The parameter shall be required, if the ShareType parameter has value 0 (NFS), 2 (CIFS), or not specified.
IN	Username	String	User name for the remote share
IN	Password	String	Password for the remote share
IN	Workgroup	String	Workgroup for the share
IN, REQ	PreserveVDConfig	Uint16	Whether to preserve the VD (Virtual Disk) configuration.
IN	ScheduledStartTime	String	Start time for the job execution in format: yyyymmddhhmmss. The string "TIME_NOW" means immediate.
IN	UntilTime	String	End time for the job execution in format: yyyymmddhhmmss. : If this parameter is not NULL, then ScheduledStartTime parameter shall also be specified.
OUT	Job	DCIM_ConcreteJob Ref	The job that represents this operation[1]
OUT	MessageID	String	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.

Qualifiers	Name	Type	Description/Values
OUT	Message	String	Error Message in English corresponding to MessageID is returned if the method fails to execute
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

556 NOTE: 1 – If return code is 4096 (Job Created), the newly created job will not execute if the LC core services are not
557 running (DCIM_LCEnumeration with AttributeName equal to "LifecycleControllerState" has the CurrentValue property
558 equal to "Disabled").

559 **Table 63 – DCIM_LCService.RestoreImage() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC002	General failure	LC002
LC017	Invalid value of parameter	"ShareType", "PreserveVDConfig"
LC023	Cannot access network share	NA
LC052	Cannot create multiple Import jobs.	NA
SUP017	Invalid start time	
SUP018	Invalid until time	
JCP017	Maximum job limit reached, cannot create new jobs	
JCP018	Backup Job is running, cannot create new jobs until the existing Backup job is completed or is cancelled	
JCP019	Restore Job is running, cannot create new jobs until the existing Restore job is completed or is cancelled	

560

8.19 DCIM_LCService.GetRSStatus()

562 The GetRSStatus() method is used to obtain the Data Manager (Remote Services) status.

563 **NOTE:** The GetRemoteServicesAPIStatus() method execution reports more granular and detailed status
564 of the Remote Services API.

565 **Table 64 – DCIM_LCService.GetRSStatus() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
2	Error occurred

566 **Table 65 – DCIM_LCService.GetRSStatus() Method: Parameters**

Qualifiers	Name	Type	Description/Values
OUT	Status	string	The status for the Data Manager: Ready Not Ready Reloading
OUT	MessageID	string	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	string	Error Message in English corresponding to MessageID is returned if the method fails to execute
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

567 **Table 66 – DCIM_LCService.GetRSStatus() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
RSI0001	The remote service is available	
RSI0002	The remote service is currently not available	
RSI0003	The remote service is reloading data	
RSI0004	The remote service is unavailable	

568 **8.20 DCIM_LCService.GetRemoteServicesAPIStatus ()**

569 The GetRemoteServicesAPIStatus() method is used to obtain the overall remote services API status that
570 includes both the host system status as well as the remote services (Data Manager) status. The overall
571 rolled up status shall be reflected in the Status output parameter.

572 **NOTE:** The LCStatus output parameter value includes the status reported by the DMStatus output
573 parameter in the GetRSStatus() method and the Lifecycle Controller status. Thus, GetRSStatus() method
574 invocation is redundant.

575 **Table 67 – DCIM_LCService.GetRemoteServicesAPIStatus() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
2	Error occurred

576 **Table 68 – DCIM_LCService.GetRemoteServicesAPIStatus() Method: Parameters**

Qualifiers	Name	Type	Description/Values
OUT	ServerStatus	uint8	The host system status: • 0 – Powered Off • 1 – In POST • 2 – Out of POST • 3 – Collecting System Inventory • 4 – Automated Task Execution • 5 – Lifecycle Controller Unified Server Configurator
OUT	LCStatus	uint8	The Lifecycle Controller status that includes the Data Manager status: • 0 – Ready • 1 – Not Initialized • 2 – Reloading data • 3 – Disabled • 4 – In Recovery • 5 – In Use
OUT	Status	uint8	The overall status of the Remote Services API: • 0 – Ready • 1 – Not Ready
OUT	MessageID	string	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	string	Error Message in English corresponding to MessageID is returned if the method fails to execute
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

577 **Table 67 – DCIM_LCService.GetRemoteServicesAPIStatus() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
LC060	Lifecycle Controller Remote Services is not ready.	NA
LC061	Lifecycle Controller Remote Services is ready.	NA

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579 # 9 Use Cases

580 See *Lifecycle Controller (LC) Integration Best Practices Guide*

581 # 10 CIM Elements

582 No additional requirements have been defined.

583 # 11 Privilege and License Requirement

584 The following table describes the privilege and license requirements for the listed operations . For the
585 detailed explanation of the privileges and licenses, refer to the Dell WSMAN Licenses and Privileges
586 specification.

587 **Table 70 – Privilege and License Requirements**

Class and Method	Instance (GroupID.Attribute Name)	Operation	User Privilege Required	License Required
DCIM_LCString	SYSID	ENUMERATE, GET	Login	NONE
DCIM_LCEnumeration	Licensed	ENUMERATE, GET	Login	NONE
DCIM_LCString	CMCIP			NONE
DCIM_LCString	Provisioning Server	ENUMERATE, GET	Login	LM_AUTO_DISCOVERY
DCIM_LCEnumeration	Auto Discovery	ENUMERATE, GET	Login	LM_AUTO_DISCOVERY
DCIM_LCEnumeration	Discovery Factory Defaults	ENUMERATE, GET	Login	LM_AUTO_DISCOVERY
DCIM_LCEnumeration	Part Configuration Update	ENUMERATE, GET	Login	LM_PART_REPLACEMENT
DCIM_LCEnumeration	Part Firmware Update	ENUMERATE, GET	Login	LM_PART_REPLACEMENT
DCIM_LCEnumeration	Collect System Inventory on Restart	ENUMERATE, GET	Login	LM_REMOTE_CONFIGURATION
DCIM_LCEnumeration	VirtualAddressManagement	ENUMERATE, GET	Login	LM_REMOTE_CONFIGURATION
DCIM_LCString	VirtualAddressManagementApplication	ENUMERATE, GET	Login	LM_REMOTE_CONFIGURATION
DCIM_LCEnumeration	IPChangeNotifyPS	ENUMERATE, GET	Login	LM_AUTO_DISCOVERY

DCIM_LCEnumeration	Lifecycle Controller State	ENUMERATE, GET	Login	LM_REMOTE_CONFIGURATION
DCIM_LCService		ENUMERATE, GET	Login	NONE
DCIM_LCService. SetAttribute()		INVOKE	Login, Configure	LM_REMOTE_CONFIGURATION
DCIM_LCService. SetAttributes()		INVOKE	Login, Configure	LM_REMOTE_CONFIGURATION
DCIM_LCService. CreateConfigJob()		INVOKE	Login, Configure	LM_REMOTE_CONFIGURATION
DCIM_LCService. ReInitiateDHS()		INVOKE	Login, Configure	LM_AUTO_DISCOVERY
DCIM_LCService. ClearProvisioningServer()		INVOKE	Login, Configure	LM_AUTO_DISCOVERY
DCIM_LCService. DownloadServerPublicKey()		INVOKE	Login, System Control	LM_REMOTE_CONFIGURATION
DCIM_LCService. DownloadClientCerts()		INVOKE	Login, System Control	LM_REMOTE_CONFIGURATION
DCIM_LCService. DeleteAutoDiscoveryClientCerts()		INVOKE	Login, System Control	LM_AUTO_DISCOVERY
DCIM_LCService. SetCertificateAndPrivateKey()		INVOKE	Login, System Control	LM_REMOTE_CONFIGURATION
DCIM_LCService. SetPublicCertificate()		INVOKE	Login, System Control	LM_REMOTE_CONFIGURATION
DCIM_LCService. DeleteAutoDiscoveryServerPublicKey()		INVOKE	Login, System Control	LM_AUTO_DISCOVERY
DCIM_LCService.LCWipe()		INVOKE	Login, System Control	NONE
DCIM_LCService.LCWipe().ExportFactoryConfiguration()		INVOKE	Login	LM_BASIC_REMOTE_INVENTORY_EXPORT
DCIM_LCService. ExportHWInventory()		INVOKE	Login	LM_BASIC_REMOTE_INVENTORY_EXPORT
DCIM_LCService. ExportLCLog()		INVOKE	Login	NONE

DCIM_LCService.. InsertCommentInLCLog()		INVOKE	Login, System Operations	LM_REMOTE_CONFI GURATION
DCIM_LCService. GetRSStatus()		INVOKE	Login	NONE
DCIM_LCService. GetRemoteServicesAPIStatus ()		INVOKE	Login	NONE
DCIM_LCService.BackupImag e()		INVOKE	Login, System Control	LM_BACKUP_REST ORE
DCIM_LCService.RestoreImag e()		INVOKE	Login, System Control	LM_BACKUP_REST ORE
DCIM_LCRegisteredProfile		ENUMER ATE, GET	Login	None.
DCIM_LCElementConformsTo Profile		ENUMER ATE, GET	Login	None.

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