

# Service Processor Profile

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# Service Processor Profile

## 109 **1 Scope**

110 The DCIM Service Processor Profile describes the properties and interfaces for executing system  
111 management tasks related to the management of the service processor, iDRAC. The profile standardizes  
112 and aggregates the description for the platform's basic properties into a system view representation and  
113 provides static methodology for the clients to query the system views without substantial traversal of the  
114 model.

## 115 **2 Normative References**

116 Refer to the following documents for more information.

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

- 119 • DMTF DSP1018, *Service Processor Profile 1.0.0*
- 120 • DMTF DSP1033, *Profile Registration Profile 1.0.0*
- 121 • DMTF DSP0226, *Web Services for Management (WS-Management) Specification 1.1.0*
- 122 • DMTF DSP0227, *WS-Management CIM Binding Specification 1.0.0*
- 123 • *Dell Lifecycle Controller Best Practices Guide 1.0*,
- 124 [http://en.community.dell.com/techcenter/extras/m/white\\_papers/20066173.aspx](http://en.community.dell.com/techcenter/extras/m/white_papers/20066173.aspx)
- 125 • *Dell WSMAN Licenses and Privileges 1.0*
- 126 • Dell Tech Center MOF Library:  
127 <http://www.delltechcenter.com/page/DCIM.Library.MOF>
- 128 • Related Managed Object Format (MOF) files:
  - 129 ○ DCIM\_SPCoMputerSystem.mof
  - 130 ○ DCIM\_TimeService.mof
  - 131 ○ DCIM\_SPHostedTimeService.mof
  - 132 ○ DCIM\_SPHostedSystemDevice.mof

## 133 **3 Terms and Definitions**

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

- 135 **3.1**  
136 **Conditional** – Indicates requirements to be followed strictly in order to conform to the document when the  
137 specified conditions are met.
- 138 **3.2**  
139 **Mandatory** – Indicates requirements to be followed strictly in order to conform to the document and from  
140 which no deviation is permitted.
- 141 **3.3**  
142 **May** – Indicates a course of action permissible within the limits of the document.
- 143 **3.4**  
144 **Optional** – Indicates a course of action permissible within the limits of the document.
- 145 **3.5**  
146 **can** – Used for statements of possibility and capability, whether material, physical, or causal.
- 147 **3.6**  
148 **cannot** – Used for statements of possibility and capability, whether material, physical, or causal.
- 149 **3.7**  
150 **need not** – Indicates a course of action permissible within the limits of the document.
- 151 **3.8**  
152 **referencing profile** – Indicates a profile that owns the definition of this class and can include a reference  
153 to this profile in its “Related Profiles” table.
- 154 **3.9**  
155 **shall** – Indicates requirements to be followed strictly in order to conform to the document and from which  
156 no deviation is permitted.

- 157 **3.10**  
158 **shall not** – Indicates requirements to be followed strictly in order to conform to the document and from  
159 which no deviation is permitted.
- 160 **3.11**  
161 **should** – Indicates that among several possibilities, one is recommended as particularly suitable, without  
162 mentioning or excluding others, or that a certain course of action is preferred but not necessarily required.
- 163 **3.12**  
164 **should not** – Indicates that a certain possibility or course of action is deprecated but not prohibited
- 165 **3.13**  
166 **FQDD** – Fully Qualified Device Descriptor is used to identify a particular component in a system.
- 167 **3.14**  
168 **Interop Namespace** – Interop Namespace is where instrumentation instantiates classes to advertise its  
169 capabilities for client discovery.
- 170 **3.15**  
171 **Implementation Namespace** – Implementation Namespace is where instrumentation instantiates  
172 classes relevant to executing core management tasks.
- 173 **3.16**  
174 **ENUMERATE** – Refers to WS-MAN `ENUMERATE` operation as described in Section 8.2 of  
175 `DSP0226_V1.1` and Section 9.1 of `DSP0227_V1.0`
- 176 **3.17**  
177 **GET** – Refers to WS-MAN `GET` operation as defined in Section 7.3 of `DSP00226_V1.1` and Section 7.1  
178 of `DSP0227_V1.0`

## 179 **4 Symbols and Abbreviated Terms**

180 **4.1**  
181 **CIM - Common Information Model**

182 **4.2**  
183 **iDRAC** - Integrated Dell Remote Access Controller – management controller for blades and monolithic  
184 servers

185 **4.3**  
186 **CMC** - Chassis Manager Controller – management controller for the modular chassis  
187

## 189 **5 Synopsis**

190 **Profile Name:** Service Processor

191 **Version:** 1.0.0

192 **Organization:** Dell

193 **CIM Schema Version:** 2.26 Experimental

194 **Dell Schema Version:** 1.0.0

195 **Interop Namespace:** root/interop

196 **Implementation Namespace:** root/dcim

197 **Central Class:** DCIM\_SPCoMputerSystem

198 **Scoping Class:** DCIM\_CoMputerSystem

199 The Dell Service Processor Profile is a component profile that contains the Dell specific implementation  
200 requirements for service processor.

201 DCIM\_SPCoMputerSystem shall be the Central Class.

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

203

**Table 1 – Related Profiles**

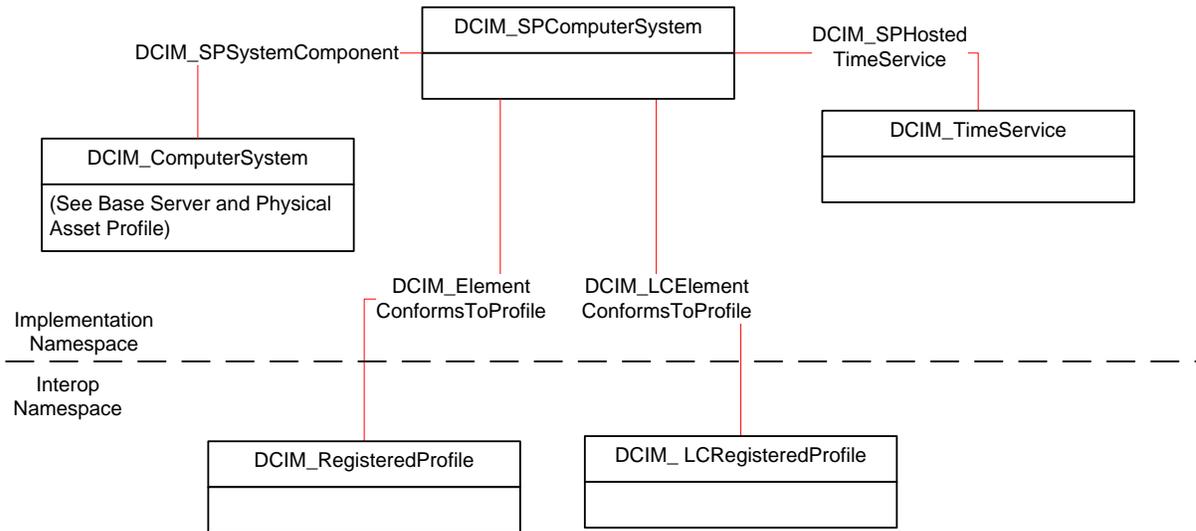
Profile Name	Organization	Version	Relationship
Profile Registration	DCIM	1.0	Reference
Service Processor	DMTF	1.0	Specialize

204 **6 Description**

205 The Dell Service Processor Profile describes a system management device.

206 Figure 1 details the class diagram of Dell Service Processor Profile

207 .



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**Figure 1 – Service Processor Profile Class Diagram**

## 210 7 Implementation Requirements

211 This section describes the requirements and guidelines for implementing Dell Service Processor Profile.

212 **Table 2 – Class Requirements: Service Processor Profile**

Element Name	Requirement	Description
<b>Classes</b>		
DCIM_SPComputerSystem	Mandatory	The class shall be implemented in the <i>Implementation Namespace</i> . See section 7.1
DCIM_TimeService	Mandatory	The class shall be implemented in the <i>Implementation Namespace</i> . See section 0
DCIM_SPSystemComponent	Mandatory	The class shall be implemented in the <i>implementation namespace</i> . See section 7.1
DCIM_SPHostedTimeService	Mandatory	The class shall be implemented in the <i>Interop Namespace</i> . See sections 7.1 and 0
DCIM_ElementConformsToProfile	Mandatory	The class shall be implemented in both the <i>Interop</i> and <i>Implementation Namespaces</i> . See sections 7.1 and 0
DCIM_RegisteredProfile	Mandatory	The class shall be implemented in the <i>Interop Namespace</i> . See section 0
DCIM_LCElementConformsToProfile	Mandatory	The class shall be implemented in both the <i>Interop</i> and <i>Implementation Namespaces</i> . See sections 7.1 and 7.4
DCIM_LCRegisteredProfile	Mandatory	The class shall be implemented in the <i>Interop Namespace</i> . See section 7.4
<b>Indications</b>		
None defined in this profile		

213

### 214 7.1 DCIM\_SPComputerSystem - Service Processor

215 This section describes the implementation for the DCIM\_SPComputerSystem class representing the  
216 service processor, iDRAC.

217 This class shall be instantiated in the Implementation Namespace.

218 The DCIM\_LCElementConformsToProfile association(s) shall reference the DCIM\_SPComputerSystem  
219 instance(s).

220 The DCIM\_SPSystemComponent association shall reference the DCIM\_SPComputerSystem instance and  
221 associate it with the DCIM\_ComputerSystem instance.

222 The DCIM\_SPHostedTimeService association shall reference the DCIM\_SPComputerSystem instance and  
223 associate it with the DCIM\_TimeService instance.

224 **7.1.1 Resource URIs for WinRM®**

225 The class Resource URI shall be “http://schemas.dell.com/wbem/wscim/1/cim-  
226 schema/2/DCIM\_SPCoMputerSystem?\_\_cimnamespace=root/dcim”

227 The key properties shall be the CreationClassName and Name.

228 The instance Resource URI for DCIM\_SPCoMputerSystem instance shall be:  
229 “http://schemas.dell.com/wbem/wscim/1/cim-  
230 schema/2/DCIM\_SPCoMputerSystem?\_\_cimnamespace=root/dcim+CreationClassName=DCIM\_SPCoM  
231 puterSystem+Name=systemmc”

232 **7.1.2 Operations**

233 The following table lists the operations implemented on DCIM\_SPCoMputerSystem.

234 **Table 3 – DCIM\_SPCoMputerSystem - Operations**

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

235

236 **7.1.3 Properties**

237 The following table lists the implemented properties for DCIM\_SPCoMputerSystem instance in a system.  
238 The “Requirements” column shall denote whether the property is implemented (for requirement  
239 definitions, see section 3). The “Additional Requirements” column shall denote either possible values for  
240 the property, or requirements on the value formulation.

241 **Table 4 – DCIM\_SPCoMputerSystem - Properties**

Property Name	Type	Requirements	Additional Requirement
CreationClassName	string	Mandatory	The property value shall be “DCIM_SPCoMputerSystem”
Name	string	Mandatory	The property value shall be “systemmc”
Element Name	string	Mandatory	
EnabledState	string	Mandatory	The property value shall be 2 (Enabled)
OperationalStatus	uint16	Mandatory	The property value shall be 2 (OK)
HealthState	uint16	Mandatory	The property value shall be 5 (OK)
PrimaryStatus	uint16	Mandatory	The property value shall be 1 (OK)
Dedicated	uint16	Mandatory	The property value shall be 28 (Management Controller)
RequestedState	uint16	Mandatory	The property value shall be 12 (not applicable)

242

243

## 244 7.2 DCIM\_TimeService – Time Service

245 This section describes the implementation for the DCIM\_TimeService class representing the time service  
246 for the service processor.

247 The DCIM\_SPHostedTimeService association shall reference the DCIM\_TimeService instance and  
248 associate it with the DCIM\_SPCoMputerSystem instance.

249 This class shall be instantiated in the Implementation Namespace.

### 250 7.2.1 Resource URIs for WinRM®

251 The class Resource URI shall be “http://schemas.dell.com/wbem/wscim/1/cim-  
252 schema/2/DCIM\_TimeService?\_\_cimnamespace=root/dcim”

253 The key properties shall be the CreationClassName, SystemName, Name, and  
254 SystemCreationClassName.

255 The instance Resource URI for DCIM\_TimeService instance shall be:  
256 “http://schemas.dell.com/wbem/wscim/1/cim-  
257 schema/2/DCIM\_TimeService?\_\_cimnamespace=root/dcim+CreationClassName=DCIM\_TimeService+S  
258 ystemCreationClassName=DCIM\_SPCoMputerSystem +SystemName= systemmc+Name= DCIM  
259 TimeService 1”

### 260 7.2.2 Operations

261 The following table lists the operations implemented on DCIM\_SystemInteger.

262 **Table 5 – DCIM\_SystemInteger – Operations**

Operation Name	Requirements	Required Input
Get	Mandatory	Instance URI
Enumerate	Mandatory	Class URI
Invoke	Mandatory	Insatnce URI

### 263 7.2.3 Class Properties

264 The following table lists the implemented properties for DCIM\_TimeService instance in a system. The  
265 “Requirements” column shall denote whether the property is implemented (for requirement definitions,  
266 see section 3). The “Additional Requirements” column shall denote either possible values for the property,  
267 or requirements on the value formulation.

268 **Table 6 – DCIM\_TimeService - Properties**

Property Name	Type	Requirement	Additional Requirements
SystemCreationClassName	string	Mandatory	The property value shall be “DCIM_SPCoMputerSystem”
SystemName	string	Mandatory	The property value shall be “systemmc”
CreationClassName	string	Mandatory	The property value shall be “DCIM_TimeService”
Name	string	Mandatory	The property value shall be “DCIM TimeService 1”
ElementName	string	Mandatory	The property value shall be “TimeService 1”

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270

271 **7.3 DCIM\_RegisteredProfile - DMTF Service Processor Profile Registration**

272 This section describes the implementation for the DCIM\_RegisteredProfile class.

273 This class shall be instantiated in the Interop Namespace.

274 The DCIM\_ElementConformsToProfile association(s) shall reference the DCIM\_RegisteredProfile  
275 instance.

276 **7.3.1 Resource URIs**

277 The class Resource URI shall be "http://schemas.dmtf.org/wbem/wscim/1/cim-  
278 schema/2/CIM\_RegisteredProfile?\_\_cimnamespace=root/interop"

279 The key property shall be the InstanceID property.

280 The instance Resource URI shall be: "http://schemas.dell.com/wbem/wscim/1/cim-  
281 schema/2/DCIM\_RegisteredProfile?\_\_cimnamespace=root/interop+InstanceID=  
282 DCIM:SPRegisteredProfile:1"

283 **7.3.2 Operations**

284 The following table lists the operations implemented on for DCIM\_RegisteredProfile.

285 **Table 7 – DCIM\_RegisteredProfile - Operations**

Operation Name	Requirements	Required Input
Get	Mandatory	Instance URI
Enumerate	Mandatory	Class URI

286 **7.3.3 Class Properties**

287 The following table lists the implemented properties for DCIM\_RegisteredProfile instance in a system.  
288 The "Requirements" column shall denote whether the property is implemented (for requirement  
289 definitions, see section 3). The "Additional Requirements" column shall denote either possible values for  
290 the property, or requirements on the value formulation.

291 **Table 8 – DCIM\_RegisteredProfile**

Property Name	Type	Requirement	Additional Requirements
InstanceID	string	Mandatory	This property value shall be "DCIM:SPRegisteredProfile:1".
RegisteredName	string	Mandatory	This property value shall be "Service Processor".
RegisteredVersion	string	Mandatory	This property value shall be "1.0.0".
RegisteredOrganization	uint16	Mandatory	This property value shall be 2 (DMTF).
AdvertiseTypes[]	uint16	Mandatory	This property value shall be [1(Other),1(Other)].
AdvertiseTypeDescriptions[]	string	Mandatory	This property value shall be ["WS-Identify", "Interop Namespace"].

292

293

## 294 7.4 DCIM\_LCRegisteredProfile

295 This section describes the implementation for the DCIM\_LCRegisteredProfile class.

296 This class shall be instantiated in the Interop Namespace.

297 The DCIM\_ElementConformsToProfile association(s) shall reference the DCIM\_LCRegisteredProfile  
298 instance.

### 299 7.4.1 Resource URIs for WinRM®

300 The class Resource URI shall be "http://schemas.dmtf.org/wbem/wscim/1/cim-  
301 schema/2/CIM\_RegisteredProfile?\_\_cimnamespace=root/interop"

302 The key property shall be the InstanceID property.

303 The instance Resource URI shall be: "http://schemas.dell.com/wbem/wscim/1/cim-  
304 schema/2/DCIM\_LCRegisteredProfile?\_\_cimnamespace=root/interop+InstanceID=DCIM:ServiceProcess  
305 or:1.0.0"

### 306 7.4.2 Operations

307 The following table lists the operations implemented on DCIM\_LCRegisteredProfile.

308 **Table 9 – DCIM\_LCRegisteredProfile - Operations**

Operation Name	Requirements	Required Input
Get	Mandatory	Instance URI
Enumerate	Mandatory	Class URI

### 309 7.4.3 Class Properties

310 The following table lists the implemented properties for DCIM\_LCRegisteredProfile instance in a system.  
311 The "Requirements" column shall denote whether the property is implemented (for requirement  
312 definitions, see section 3). The "Additional Requirements" column shall denote either possible values for  
313 the property, or requirements on the value formulation.

314 **Table 10 – DCIM\_LCRegisteredProfile**

Property Name	Type	Requirement	Additional Requirements
InstanceID	string	Mandatory	This property value shall be "DCIM:ServiceProcessor:1.0.0".
RegisteredName	string	Mandatory	This property value shall be "Service Processor".
RegisteredVersion	string	Mandatory	This property value shall be "1.0.0".
RegisteredOrganization	uint16	Mandatory	This property value shall be 1 (Other).
OtherRegisteredOrganization	string	Mandatory	This property value shall be "DCIM".
AdvertiseTypes[]	uint16	Mandatory	This property value shall be [1 (Other), 1 (Other)].
AdvertiseTypeDescriptions[]	string	Mandatory	This property value shall be ["WS-Identify", "Interop Namespace"].

Property Name	Type	Requirement	Additional Requirements
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: <ul style="list-style-type: none"> <li>• "LICENSED"</li> <li>• "NOT_LICENSED"</li> </ul> If no license is required for the profile, the property shall have value NULL.

315

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## 317 **8 Methods**

318 This section details the requirements for supporting extrinsic methods for the CIM elements defined by  
319 this profile.

### 320 **8.1 DCIM\_SPCoMputerSystem.RequestStateChange()**

321 Invocation of the CIM\_CoMputerSystem.RequestStateChange() method resets the iDRAC's state to the  
322 value specified in the RequestedState parameter.

323 Table 11 provides the return values and Table 12 provides the parameters for the RequestStateChange()  
324 method.

325 **Table 11 – CIM\_ComputerSystem.RequestStateChange() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
2	Error occurred

326 **Table 12 – CIM\_ComputerSystem.RequestStateChange() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, REQ	RequestedState	uint16	11 (Reset)
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

327 **Table 13 – CIM\_ComputerSystem.RequestStateChange() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
RAC048	The command was successful	NA
RAC040	Missing parameter(s) <parameters>	RequestedState
RAC038	Cannot perform the operation due to an unknown error in iDRAC.	NA
RAC049	Resource allocation failure	NA
RAC039	Invalid parameter value for <parameter>	RequestedState

328

329 **8.2 DCIM\_TimeService.ManageTime()**

330 The DCIM\_TimeService.ManageTime() method is used to query the service processor time and to set the  
 331 service processor time in between of the host system reboots and service processor resets. Note that the  
 332 the service processor time set through the successful execution of this method does not persist and is  
 333 volatile. The service processor time shall reset to the BIOS time on every reset of the host system or the  
 334 service processor.

335 For querying the service processor time, the GetRequest parameter shall have a value of TRUE, the  
 336 TimeData parameter shall be an output parameter that contains the service processor time data. For  
 337 setting the service processor time, the GetRequest parameter shall have a value of FALSE and the  
 338 TimeData parameter shall have the time to be set. If the GetRequest parameter is not specified, the  
 339 method shall return a value of 2 (Error Occurred).

340 Detailed requirements of the CIM\_TimeService() method are specified in Table 14 and Table 15. No  
 341 standard messages are defined for this method.

342 **Table 14 – CIM\_TimeService.ManageTime() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
2	Error occurred

343 **Table 15 – CIM\_TimeService.ManageTime() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, REQ	GetRequest	Boolean	The parameter shall be set to TRUE to request the time for the iDRAC, and shall be set to FALSE for setting the time for the iDRAC.
IN, OUT	TimeData	datetime	On input, this is the desired value for the service processor time. On output, this is the service processor time.
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

344 **Table 16 – CIM\_TimeService.ManageTime() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
RAC048	The command was successful	NA
RAC040	Missing parameter(s) <parameters>	GetRequest
RAC038	Cannot perform the operation due to an unknown error in iDRAC.	NA
RAC049	Resource allocation failure	NA
RAC039	Invalid parameter value for <parameter>	GetRequest

345

## 346 **9 Use Cases**

347 See *Lifecycle Controller (LC) Integration Best Practices Guide*.

## 348 **10 CIM Elements**

349 No additional details specified.

## 350 11 Privilege and License Requirement

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

354 **Table 17 – Privilege and License Requirements**

Class and Method	Operation	User Privilege Required	License Required
DCIM_SPComputerSystem	ENUMERATE, GET	Login	None.
DCIM_SPComputerSystem.RequestedStateChange()	INVOKE	Login, System Control	None.
DCIM_TimeService	ENUMERATE, GET	Login	None.
DCIM_TimeService.ManageTime()	INVOKE	Login, System Control	None.
DCIM_SPSystemComponent	ENUMERATE, GET	Login	None.
DCIM_SPHostedTimeService	ENUMERATE, GET	Login	None.
DCIM_ElementConformsToProfile	ENUMERATE, GET	Login	None.
DCIM_RegisteredProfile	ENUMERATE, GET	Login	None.
DCIM_LCRegisteredProfile	ENUMERATE, GET	Login	None.
DCIM_LCElementConformsToProfile	ENUMERATE, GET	Login	None.

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## ANNEX A (informative)

### Change Log

Version	Date	Description
1.0.0	03/08/2012	Initial Version.
1.0.1	04/10/2012	Corrected the DCIM_TimeService.ElementName property value constraint.
1.0.2	10/17/2012	Added behavior description regarding the volatility of the service processor time in the DCIM_TimeService.ManageTime() method.

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