

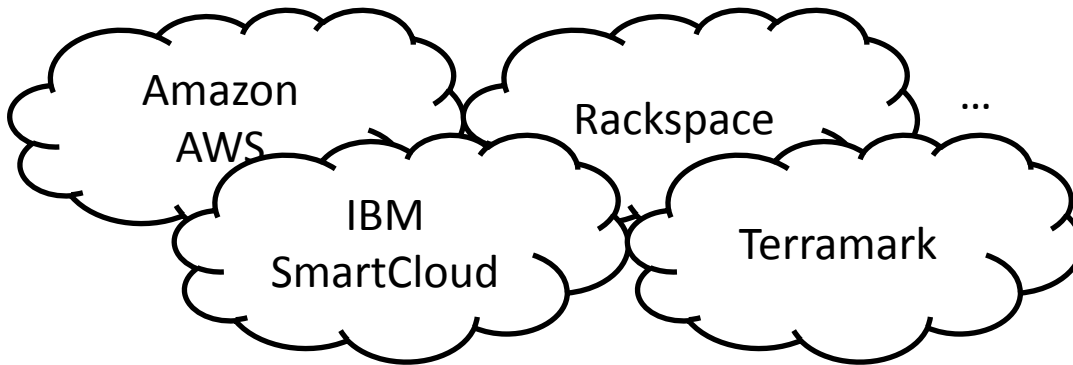
Towards model-driven provisioning, deployment, monitoring, and adaptation of multi-cloud systems

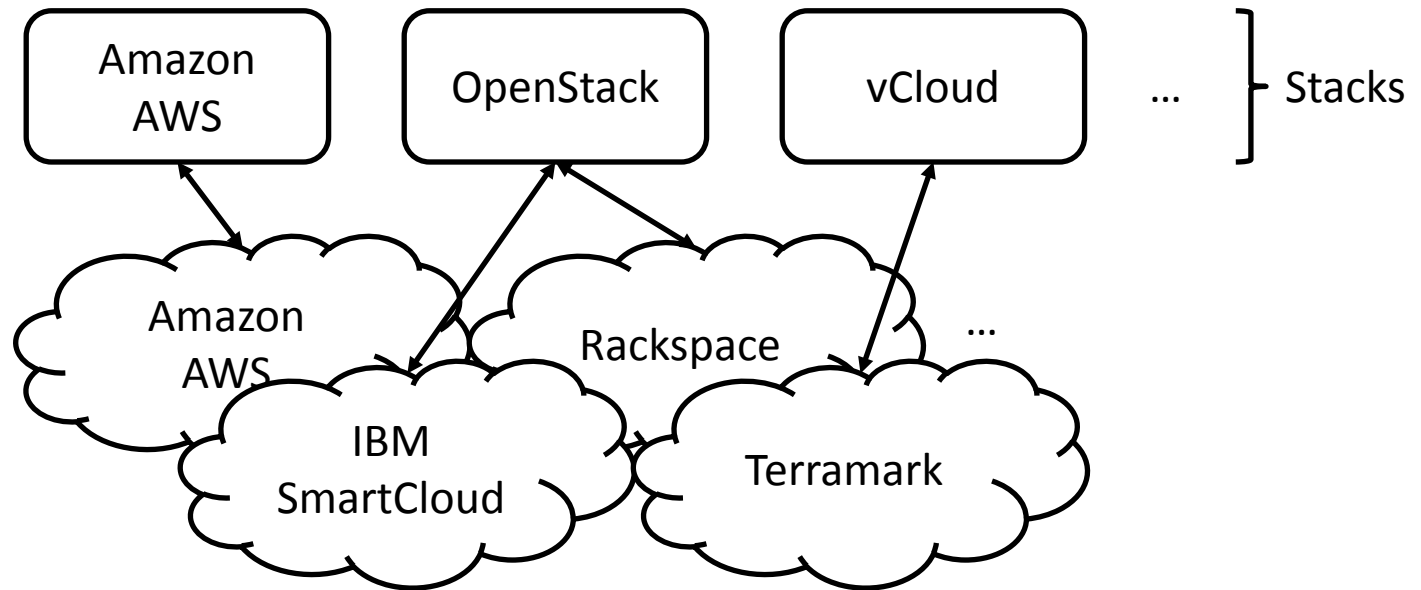
Nicolas Ferry, Alessandro Rossini, Franck
Chauvel, Brice Morin, Arnor Solberg

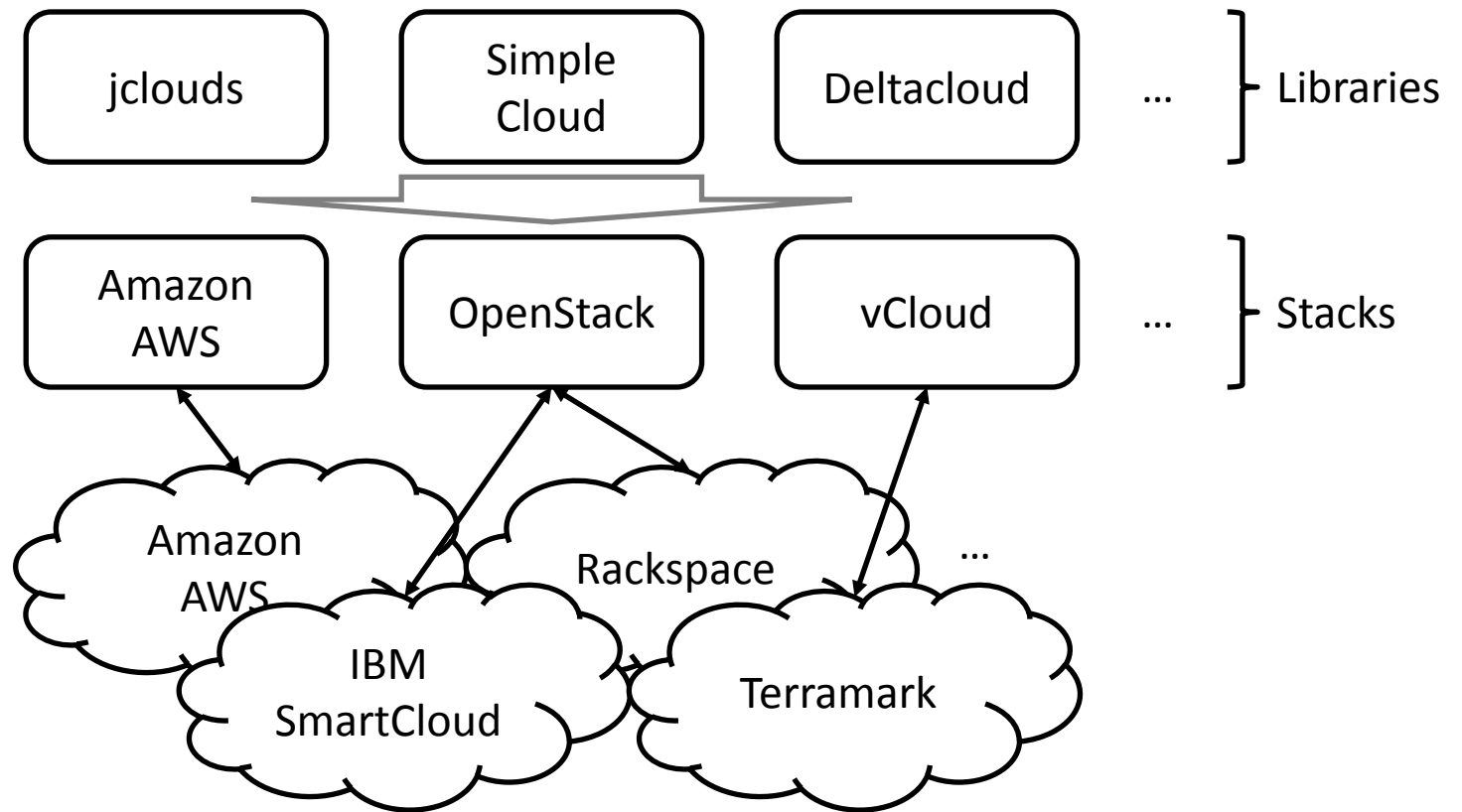
IEEE CLOUD, 30 June 2013



cloudML







CloudML

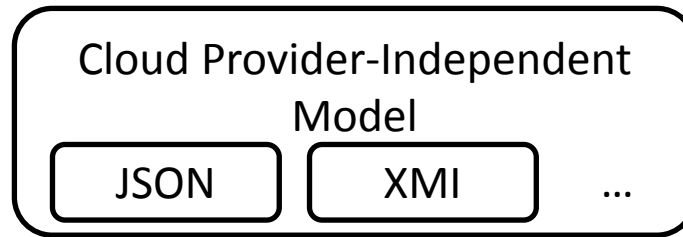
CloudML

- Domain-specific language (DSL) for modelling the provisioning and deployment of multi-cloud systems at design-time

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- Domain-specific language (DSL) for modelling the provisioning and deployment of multi-cloud systems at design-time
- Models@run-time environment for enacting the provisioning and deployment of these systems at run-time

Design-time



Node type

- Generic virtual machine
 - Provisioning requirements

Node type (JSON)

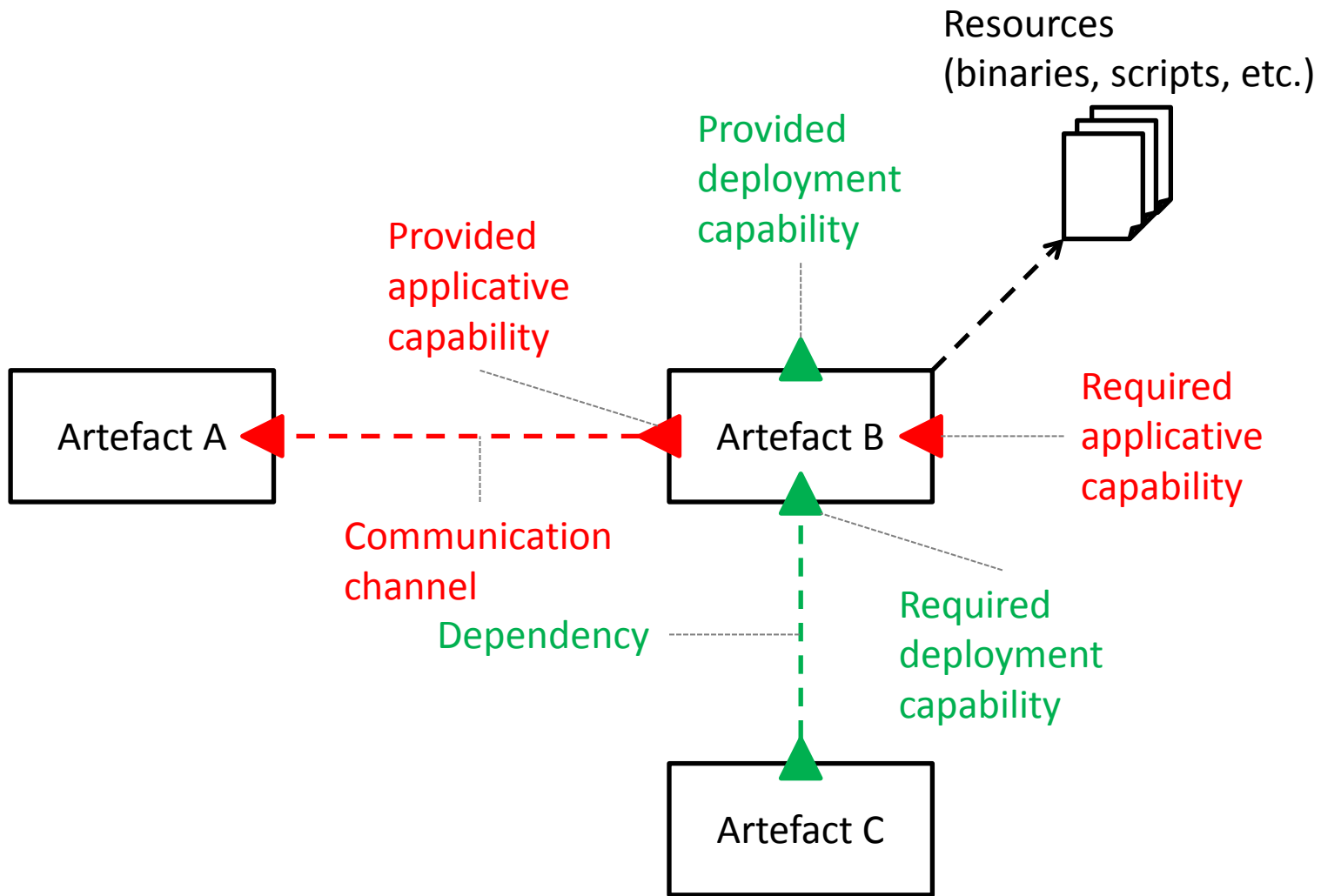
```
"nodeTypes": [  
  {  
    "id": "SmallGNUlinux",  
    "os": "GNUlinux",  
    "compute": [ 2, 4 ],  
    "memory": [ 2048, 4096 ],  
    "storage": [ 10240 ],  
    "location": "eu",  
    "provides": [  
      { "id": "SSHCapability" }  
    ]  
  }  
]
```

Artefact type

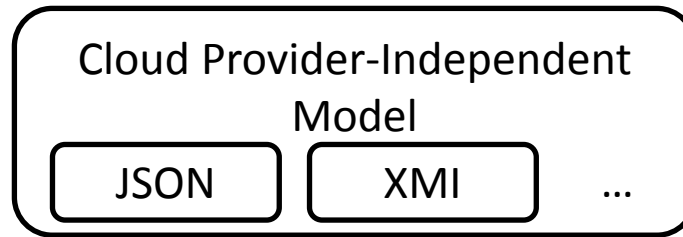
- Generic component of an application
 - Deployment scripts
 - Deployment dependencies
 - Communication channels

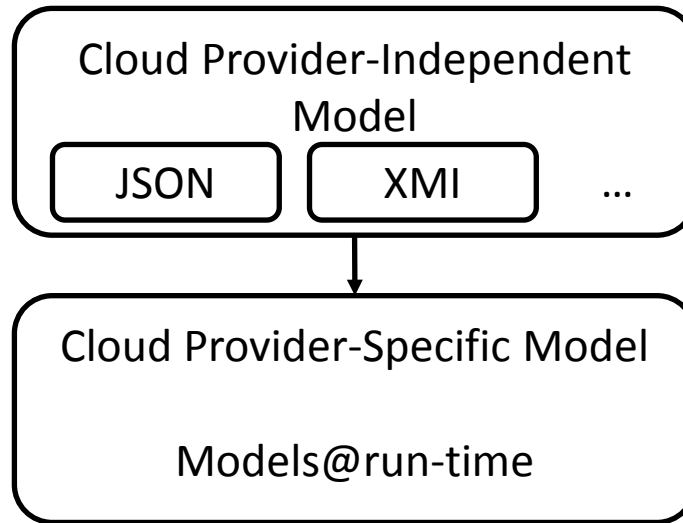
Artefact type (JSON)

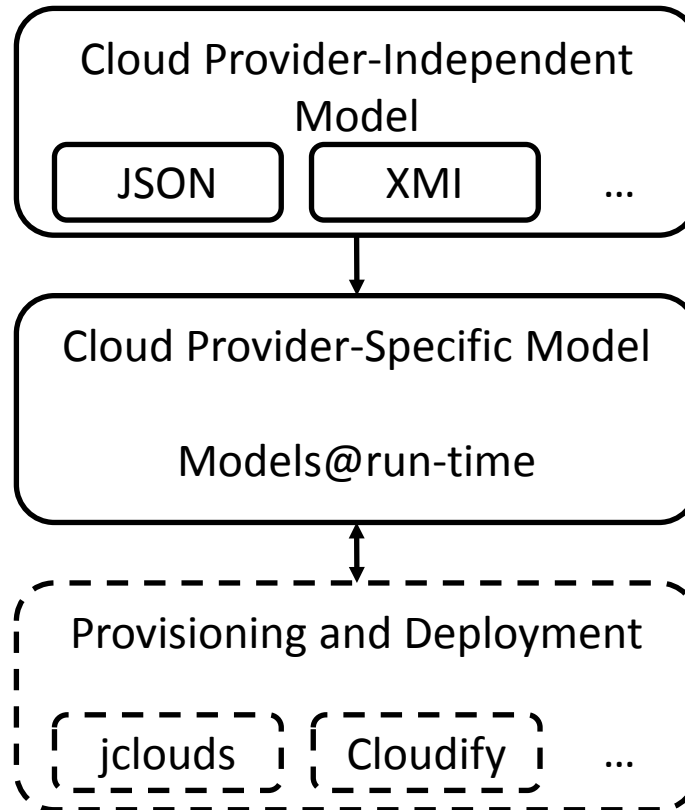
```
"artefactsTypes": [  
  {  
    "id": "Docs",  
    "retrieval": "wget http://cloudml.org/apps/docs.war; wget  
http://cloudml.org/apps/docs_configure; wget  
http://cloudml.org/apps/docs_deploy",  
    "configuration": "sudo docs_configure",  
    "deployment": "sudo docs_deploy",  
    "requires": [  
      { "id": "JettyCapability" },  
      { "id": "MongoDBCapability" }  
    ]  
  }  
  ...  
]
```

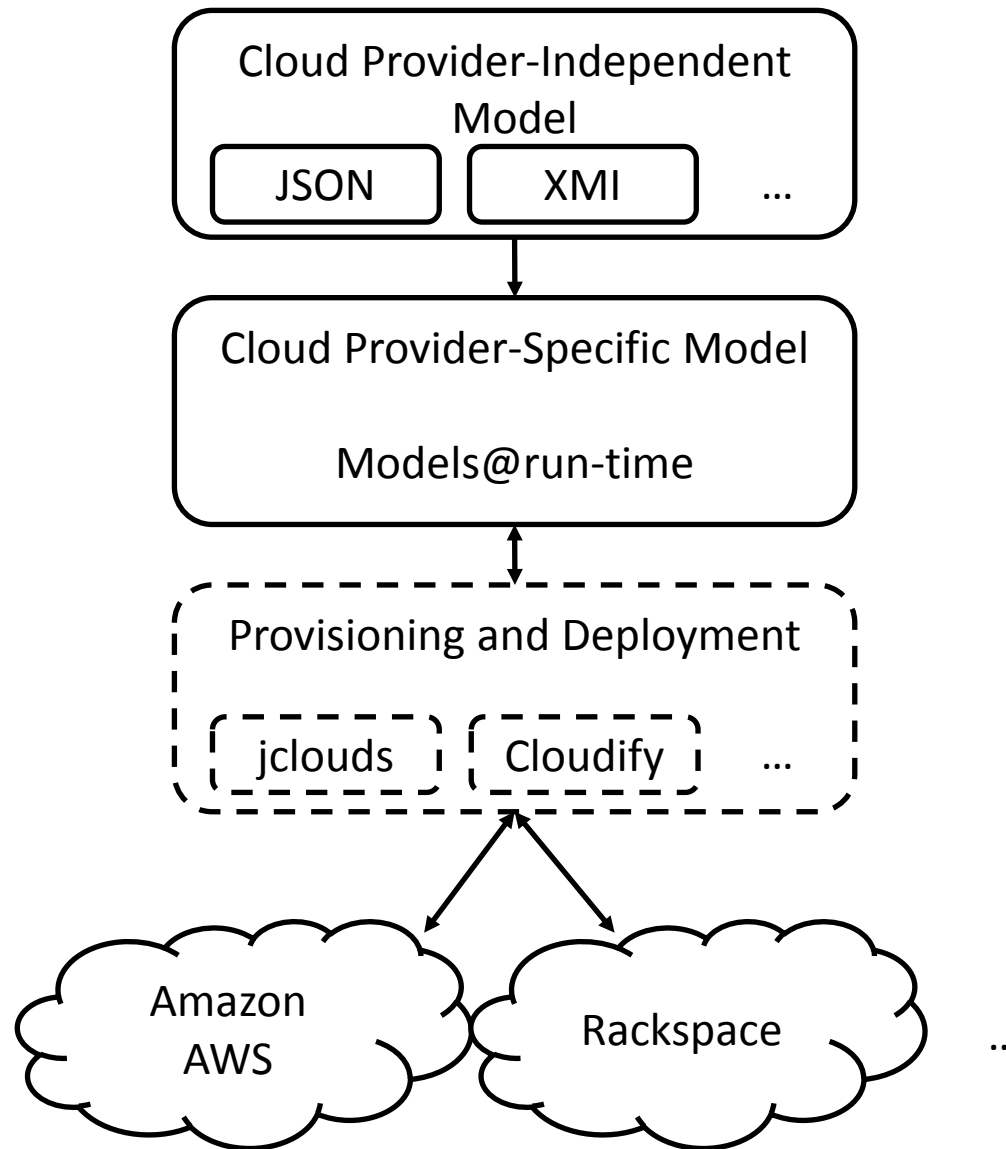


Run-time





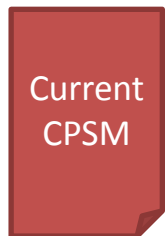




Models@run-time

- CPSM causally connected to the running system
- A change in the CPSM is reflected on-demand in the running system
- A change in the running system is automatically reflected in the CPSM

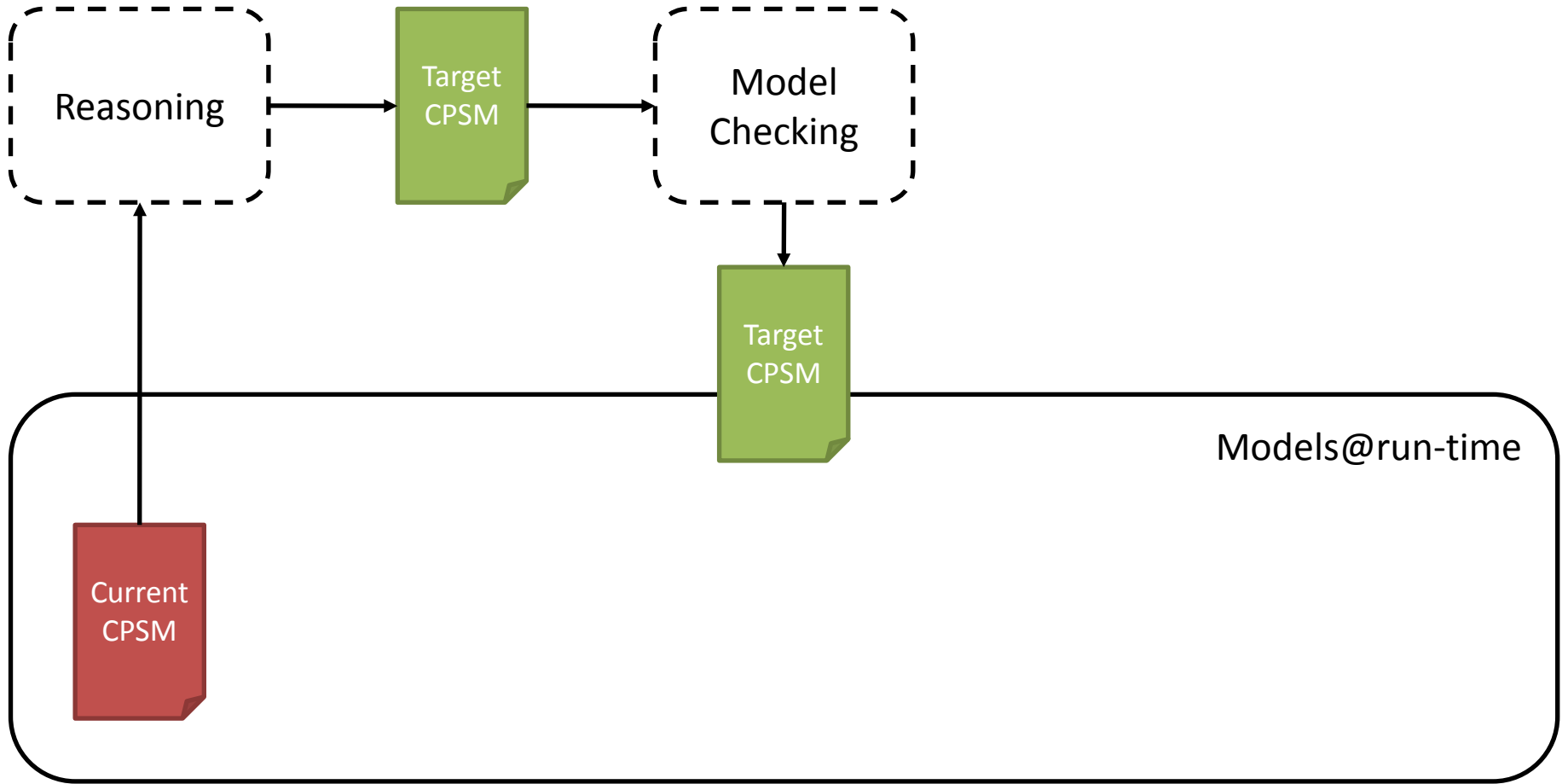
Models@run-time

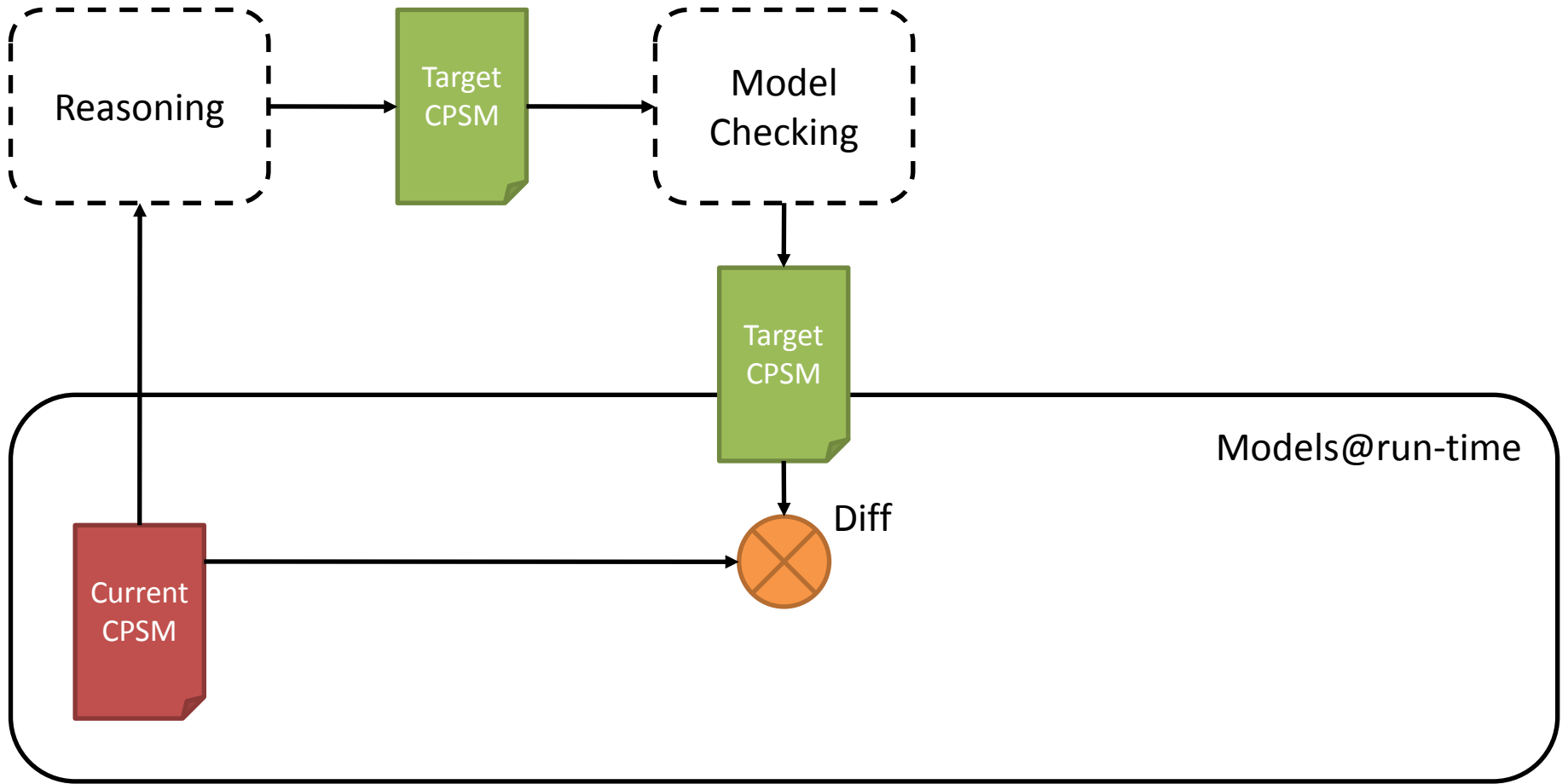


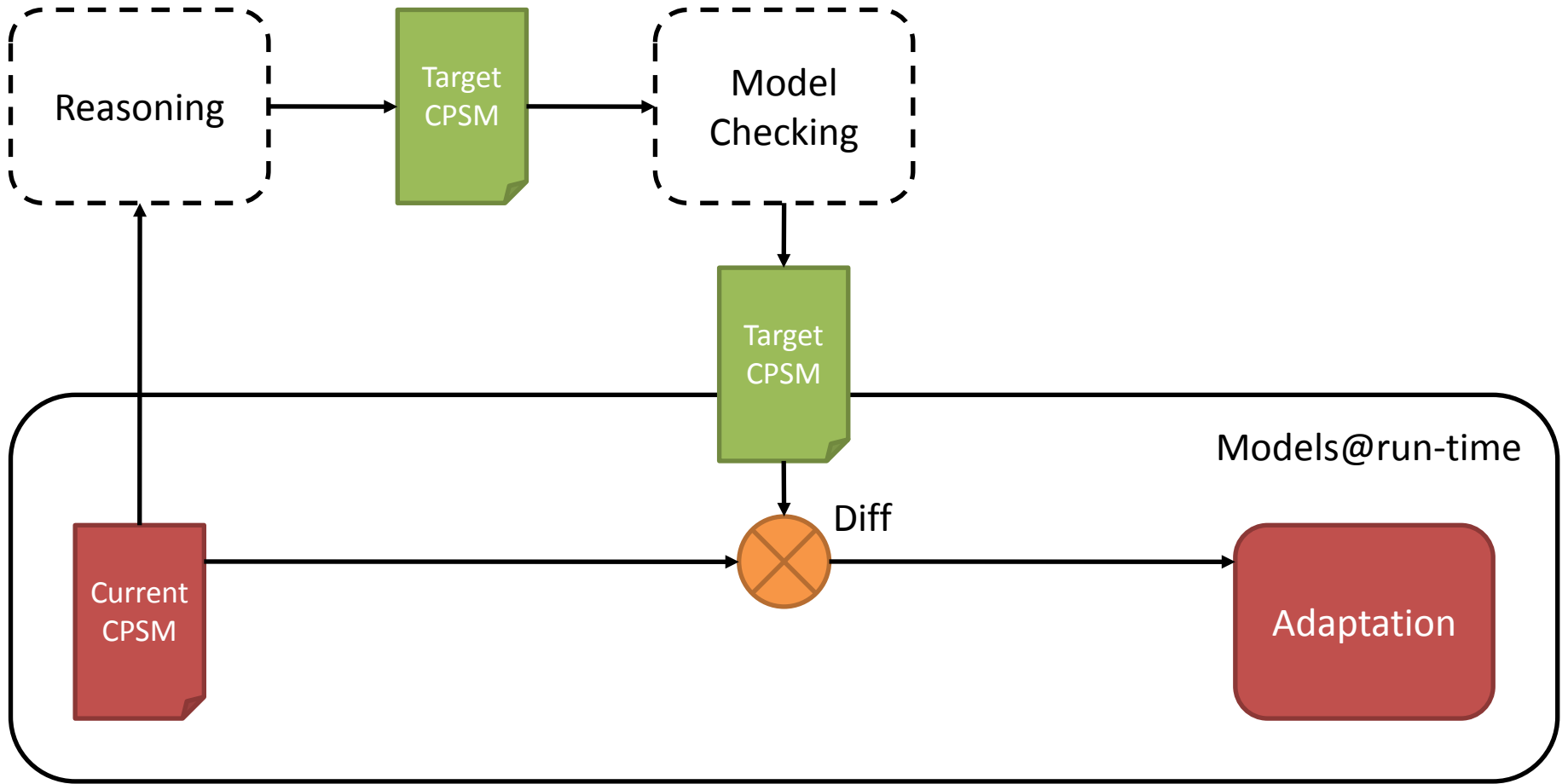


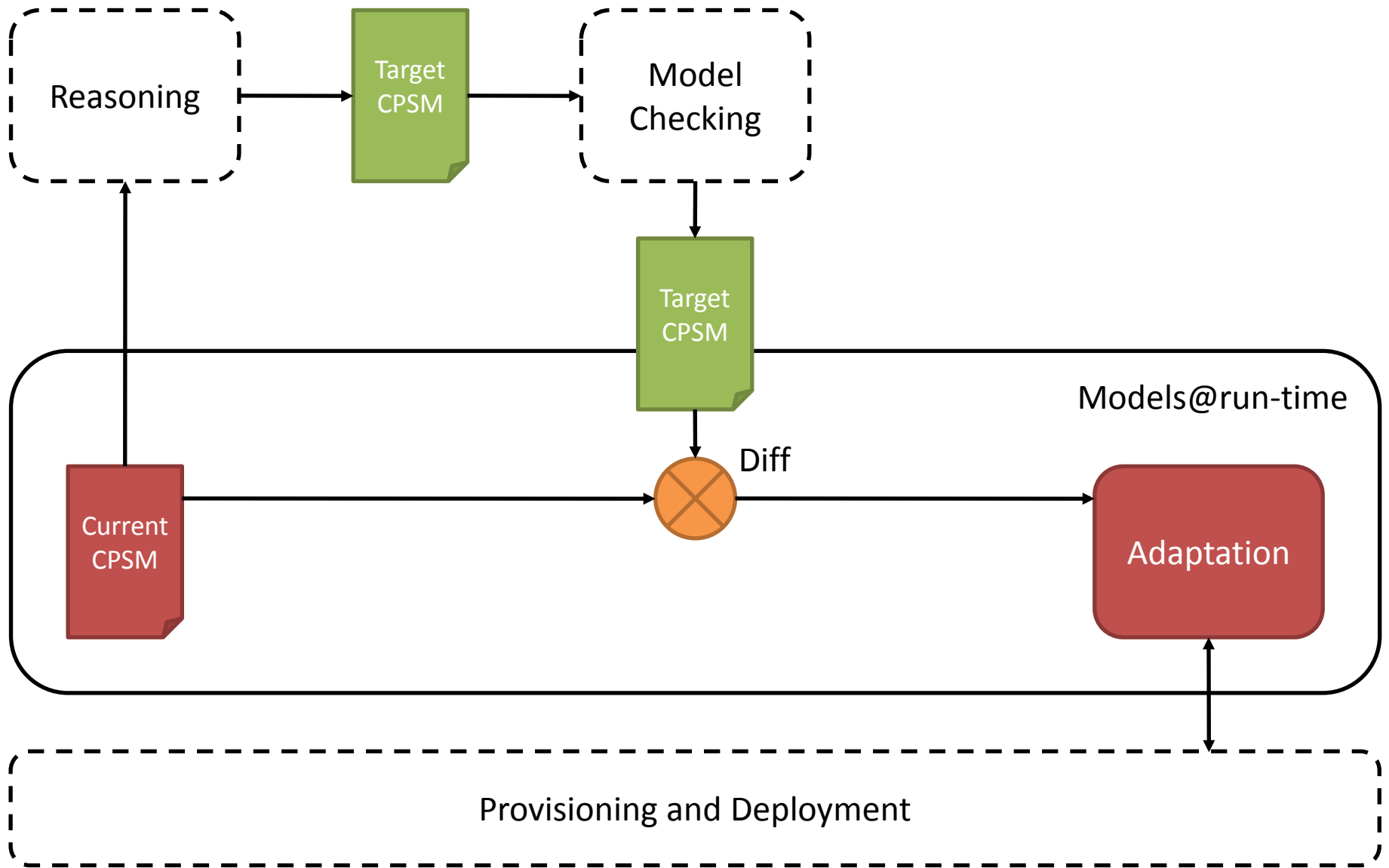


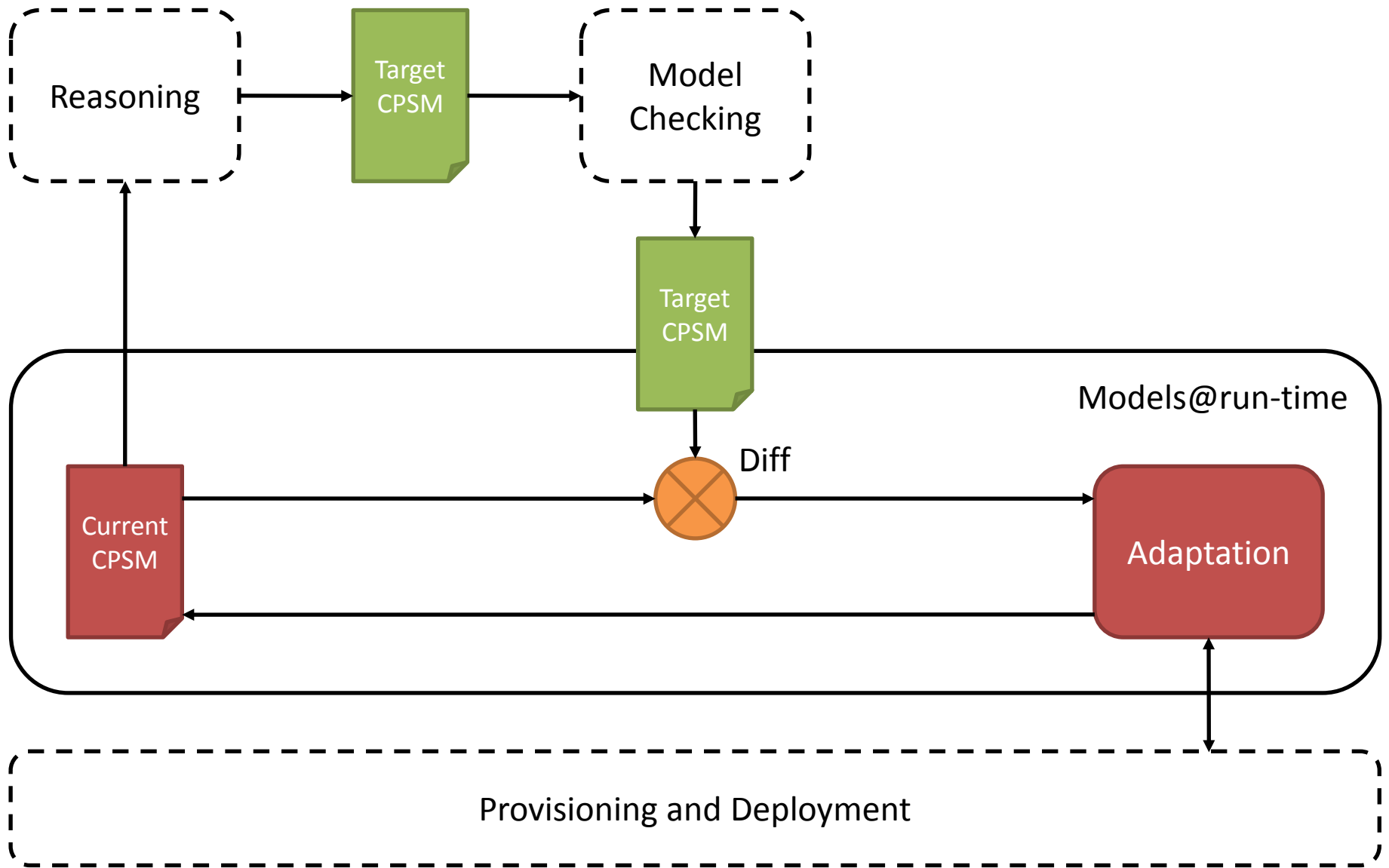










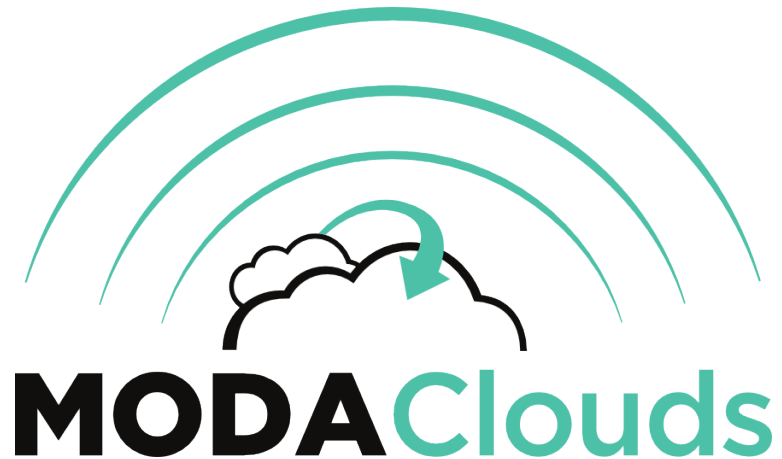


Summary

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Acknowledgements



Thank you!



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