



Welcome

# AWS Launch Wizard



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# AWS Launch Wizard: Welcome

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# Welcome

AWS Launch Wizard offers a guided way of sizing, configuring, and deploying AWS resources for third party applications, such as Microsoft SQL Server Always On and HANA based SAP systems, without the need to manually identify and provision individual AWS resources.

This document was last published on July 2, 2024.

# Actions

The following actions are supported:

- [CreateDeployment](#)
- [DeleteDeployment](#)
- [GetDeployment](#)
- [GetWorkload](#)
- [GetWorkloadDeploymentPattern](#)
- [ListDeploymentEvents](#)
- [ListDeployments](#)
- [ListTagsForResource](#)
- [ListWorkloadDeploymentPatterns](#)
- [ListWorkloads](#)
- [TagResource](#)
- [UntagResource](#)



# CreateDeployment

Creates a deployment for the given workload. Deployments created by this operation are not available in the Launch Wizard console to use the Clone deployment action on.

## Request Syntax

```
POST /createDeployment HTTP/1.1
Content-type: application/json

{
  "deploymentPatternName": "string",
  "dryRun": boolean,
  "name": "string",
  "specifications": {
    "string" : "string"
  },
  "tags": {
    "string" : "string"
  },
  "workloadName": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### deploymentPatternName

The name of the deployment pattern supported by a given workload. You can use the [ListWorkloadDeploymentPatterns](#) operation to discover supported values for this parameter.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `^[A-Za-z0-9][a-zA-Z0-9-]*$`

Required: Yes

### dryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### name

The name of the deployment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

Pattern: `^[A-Za-z0-9_\.-]+$`

Required: Yes

### specifications

The settings specified for the deployment. These settings define how to deploy and configure your resources created by the deployment. For more information about the specifications required for creating a deployment for a SAP workload, see [SAP deployment specifications](#). To retrieve the specifications required to create a deployment for other workloads, use the [GetWorkloadDeploymentPattern](#) operation.

Type: String to string map

Map Entries: Maximum number of 100 items.

Key Length Constraints: Minimum length of 3. Maximum length of 256.

Key Pattern: `^[a-zA-Z0-9- :]+$`

Value Length Constraints: Minimum length of 1. Maximum length of 1500.

Required: Yes

## tags

The tags to add to the deployment.

Type: String to string map

Map Entries: Maximum number of 200 items.

Key Length Constraints: Minimum length of 1. Maximum length of 128.

Key Pattern: `^(?!aws:)[a-zA-Z+-. _:/]+$`

Value Length Constraints: Minimum length of 0. Maximum length of 256.

Required: No

## workloadName

The name of the workload. You can use the [ListWorkloads](#) operation to discover supported values for this parameter.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Pattern: `^[A-Za-z][a-zA-Z0-9-_*]$`

Required: Yes

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "deploymentId": "string"
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

## deploymentId

The ID of the deployment.

Type: String

Length Constraints: Minimum length of 2. Maximum length of 128.

Pattern: `^[a-zA-Z0-9-]+$`

## Errors

For information about the errors that are common to all actions, see [Common Errors](#).

### InternalServerErrorException

An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a question on [re:Post](#).

HTTP Status Code: 500

### ResourceLimitException

You have exceeded an AWS Launch Wizard resource limit. For example, you might have too many deployments in progress.

HTTP Status Code: 400

### ResourceNotFoundException

The specified workload or deployment resource can't be found.

HTTP Status Code: 404

### ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteDeployment

Deletes a deployment.

## Request Syntax

```
POST /deleteDeployment HTTP/1.1
Content-type: application/json
```

```
{
  "deploymentId": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### deploymentId

The ID of the deployment.

Type: String

Length Constraints: Minimum length of 2. Maximum length of 128.

Pattern: `^[a-zA-Z0-9-]+$`

Required: Yes

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json
```

```
{
  "status": "string",
  "statusReason": "string"
}
```

```
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### status

The status of the deployment.

Type: String

Valid Values: COMPLETED | CREATING | DELETE\_IN\_PROGRESS | DELETE\_INITIATING  
| DELETE\_FAILED | DELETED | FAILED | IN\_PROGRESS | VALIDATING

### statusReason

The reason for the deployment status.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors](#).

### **InternalServerError**

An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a question on [re:Post](#).

HTTP Status Code: 500

### **ResourceLimitException**

You have exceeded an AWS Launch Wizard resource limit. For example, you might have too many deployments in progress.

HTTP Status Code: 400

### **ResourceNotFoundException**

The specified workload or deployment resource can't be found.

HTTP Status Code: 404

## ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# GetDeployment

Returns information about the deployment.

## Request Syntax

```
POST /getDeployment HTTP/1.1
Content-type: application/json
```

```
{
  "deploymentId": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### deploymentId

The ID of the deployment.

Type: String

Length Constraints: Minimum length of 2. Maximum length of 128.

Pattern: `^[a-zA-Z0-9-]+$`

Required: Yes

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json
```

```
{
  "deployment": {
    "createdAt": number,
```

```
"deletedAt": number,  
"deploymentArn": "string",  
"id": "string",  
"name": "string",  
"patternName": "string",  
"resourceGroup": "string",  
"specifications": {  
  "string" : "string"  
},  
"status": "string",  
"tags": {  
  "string" : "string"  
},  
"workloadName": "string"  
}  
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### deployment

An object that details the deployment.

Type: [DeploymentData](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#).

### InternalServerError

An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a question on [re:Post](#).

HTTP Status Code: 500

### ResourceNotFoundException

The specified workload or deployment resource can't be found.

HTTP Status Code: 404

## ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetWorkload

Returns information about a workload.

## Request Syntax

```
POST /getWorkload HTTP/1.1
Content-type: application/json
```

```
{
  "workloadName": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### workloadName

The name of the workload.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Pattern: `^[A-Za-z][a-zA-Z0-9-_*]*$`

Required: Yes

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json
```

```
{
  "workload": {
    "description": "string",
```

```
"displayName": "string",
"documentationUrl": "string",
"iconUrl": "string",
"status": "string",
"statusMessage": "string",
"workloadName": "string"
}
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### workload

Information about the workload.

Type: [WorkloadData](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#).

### InternalServerErrorException

An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a question on [re:Post](#).

HTTP Status Code: 500

### ResourceNotFoundException

The specified workload or deployment resource can't be found.

HTTP Status Code: 404

### ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetWorkloadDeploymentPattern

Returns details for a given workload and deployment pattern, including the available specifications. You can use the [ListWorkloads](#) operation to discover the available workload names and the [ListWorkloadDeploymentPatterns](#) operation to discover the available deployment pattern names of a given workload.

## Request Syntax

```
POST /getWorkloadDeploymentPattern HTTP/1.1
Content-type: application/json

{
  "deploymentPatternName": "string",
  "workloadName": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### deploymentPatternName

The name of the deployment pattern.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `^[A-Za-z0-9][a-zA-Z0-9-]*$`

Required: Yes

### workloadName

The name of the workload.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Pattern: `^[A-Za-z][a-zA-Z0-9-_*]*$`

Required: Yes

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "workloadDeploymentPattern": {
    "deploymentPatternName": "string",
    "description": "string",
    "displayName": "string",
    "specifications": [
      {
        "allowedValues": [ "string" ],
        "conditionals": [
          {
            "comparator": "string",
            "name": "string",
            "value": "string"
          }
        ],
        "description": "string",
        "name": "string",
        "required": "string"
      }
    ],
    "status": "string",
    "statusMessage": "string",
    "workloadName": "string",
    "workloadVersionName": "string"
  }
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.



The following data is returned in JSON format by the service.

### [workloadDeploymentPattern](#)

Details about the workload deployment pattern.

Type: [WorkloadDeploymentPatternData](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#).

### InternalServerError

An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a question on [re:Post](#).

HTTP Status Code: 500

### ResourceNotFoundException

The specified workload or deployment resource can't be found.

HTTP Status Code: 404

### ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListDeploymentEvents

Lists the events of a deployment.

## Request Syntax

```
POST /listDeploymentEvents HTTP/1.1
Content-type: application/json
```

```
{
  "deploymentId": "string",
  "maxResults": number,
  "nextToken": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### deploymentId

The ID of the deployment.

Type: String

Length Constraints: Minimum length of 2. Maximum length of 128.

Pattern: `^[a-zA-Z0-9-]+$`

Required: Yes

### maxResults

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

### nextToken

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "deploymentEvents": [
    {
      "description": "string",
      "name": "string",
      "status": "string",
      "statusReason": "string",
      "timestamp": number
    }
  ],
  "nextToken": "string"
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### deploymentEvents

Lists the deployment events.

Type: Array of [DeploymentEventDataSummary](#) objects

### [nextToken](#)

The token to include in another request to get the next page of items. This value is null when there are no more items to return.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

## Errors

For information about the errors that are common to all actions, see [Common Errors](#).

### InternalServerError

An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a question on [re:Post](#).

HTTP Status Code: 500

### ResourceNotFoundException

The specified workload or deployment resource can't be found.

HTTP Status Code: 404

### ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListDeployments

Lists the deployments that have been created.

## Request Syntax

```
POST /listDeployments HTTP/1.1
Content-type: application/json

{
  "filters": [
    {
      "name": "string",
      "values": [ "string" ]
    }
  ],
  "maxResults": number,
  "nextToken": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### filters

Filters to scope the results. The following filters are supported:

- WORKLOAD\_NAME - The name used in deployments.
- DEPLOYMENT\_STATUS - COMPLETED | CREATING | DELETE\_IN\_PROGRESS | DELETE\_INITIATING | DELETE\_FAILED | DELETED | FAILED | IN\_PROGRESS | VALIDATING

Type: Array of [DeploymentFilter](#) objects

Array Members: Minimum number of 1 item.

Required: No

## maxResults

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

## nextToken

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "deployments": [
    {
      "createdAt": number,
      "id": "string",
      "name": "string",
      "patternName": "string",
      "status": "string",
      "workloadName": "string"
    }
  ],
  "nextToken": "string"
}
```



## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### deployments

Lists the deployments.

Type: Array of [DeploymentDataSummary](#) objects

### nextToken

The token to include in another request to get the next page of items. This value is null when there are no more items to return.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

## Errors

For information about the errors that are common to all actions, see [Common Errors](#).

### **InternalServerError**

An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a question on [re:Post](#).

HTTP Status Code: 500

### **ValidationException**

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListTagsForResource

Lists the tags associated with a specified resource.

## Request Syntax

```
GET /tags/resourceArn HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### resourceArn

The Amazon Resource Name (ARN) of the resource.

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "tags": {
    "string" : "string"
  }
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

## tags

Information about the tags.

Type: String to string map

Map Entries: Maximum number of 200 items.

Key Length Constraints: Minimum length of 1. Maximum length of 128.

Key Pattern: `^(?!aws:)[a-zA-Z+ -=._:/]+$`

Value Length Constraints: Minimum length of 0. Maximum length of 256.

## Errors

For information about the errors that are common to all actions, see [Common Errors](#).

### **InternalServerError**

An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a question on [re:Post](#).

HTTP Status Code: 500

### **ResourceNotFoundException**

The specified workload or deployment resource can't be found.

HTTP Status Code: 404

### **ValidationException**

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListWorkloadDeploymentPatterns

Lists the workload deployment patterns for a given workload name. You can use the [ListWorkloads](#) operation to discover the available workload names.

## Request Syntax

```
POST /listWorkloadDeploymentPatterns HTTP/1.1
Content-type: application/json
```

```
{
  "maxResults": number,
  "nextToken": "string",
  "workloadName": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### [maxResults](#)

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

### [nextToken](#)

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: No

### workloadName

The name of the workload.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Pattern: `^[A-Za-z][a-zA-Z0-9-_*]*$`

Required: Yes

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "nextToken": "string",
  "workloadDeploymentPatterns": [
    {
      "deploymentPatternName": "string",
      "description": "string",
      "displayName": "string",
      "status": "string",
      "statusMessage": "string",
      "workloadName": "string",
      "workloadVersionName": "string"
    }
  ]
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

## [nextToken](#)

The token to include in another request to get the next page of items. This value is null when there are no more items to return.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

## [workloadDeploymentPatterns](#)

Describes the workload deployment patterns.

Type: Array of [WorkloadDeploymentPatternDataSummary](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#).

### InternalServerError

An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a question on [re:Post](#).

HTTP Status Code: 500

### ResourceNotFoundException

The specified workload or deployment resource can't be found.

HTTP Status Code: 404

### ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:



- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListWorkloads

Lists the available workload names. You can use the [ListWorkloadDeploymentPatterns](#) operation to discover the available deployment patterns for a given workload.

## Request Syntax

```
POST /listWorkloads HTTP/1.1
Content-type: application/json

{
  "maxResults": number,
  "nextToken": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### maxResults

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

### nextToken

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "nextToken": "string",
  "workloads": [
    {
      "displayName": "string",
      "workloadName": "string"
    }
  ]
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### nextToken

The token to include in another request to get the next page of items. This value is null when there are no more items to return.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

### workloads

Information about the workloads.

Type: Array of [WorkloadDataSummary](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#).

## InternalServerErrorException

An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a question on [re:Post](#).

HTTP Status Code: 500

## ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# TagResource

Adds the specified tags to the given resource.

## Request Syntax

```
POST /tags/resourceArn HTTP/1.1
Content-type: application/json
```

```
{
  "tags": {
    "string" : "string"
  }
}
```

## URI Request Parameters

The request uses the following URI parameters.

### resourceArn

The Amazon Resource Name (ARN) of the resource.

Required: Yes

## Request Body

The request accepts the following data in JSON format.

### tags

One or more tags to attach to the resource.

Type: String to string map

Map Entries: Maximum number of 200 items.

Key Length Constraints: Minimum length of 1. Maximum length of 128.

Key Pattern:  $^(?!aws:)[a-zA-Z+-. _:/]+$

Value Length Constraints: Minimum length of 0. Maximum length of 256.

Required: Yes

## Response Syntax

```
HTTP/1.1 200
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

## Errors

For information about the errors that are common to all actions, see [Common Errors](#).

### InternalServerError

An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a question on [re:Post](#).

HTTP Status Code: 500

### ResourceNotFoundException

The specified workload or deployment resource can't be found.

HTTP Status Code: 404

### ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UntagResource

Removes the specified tags from the given resource.

## Request Syntax

```
DELETE /tags/resourceArn?tagKeys=tagKeys HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### resourceArn

The Amazon Resource Name (ARN) of the resource.

Required: Yes

### tagKeys

Keys identifying the tags to remove.

Array Members: Minimum number of 1 item. Maximum number of 200 items.

Length Constraints: Minimum length of 1. Maximum length of 128.

Pattern:  $^(?!aws:)[a-zA-Z+ -= . _ : / ] + \$$

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.



## Errors

For information about the errors that are common to all actions, see [Common Errors](#).

### InternalServerError

An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a question on [re:Post](#).

HTTP Status Code: 500

### ResourceNotFoundException

The specified workload or deployment resource can't be found.

HTTP Status Code: 404

### ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400


## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# Data Types

The AWS Launch Wizard API contains several data types that various actions use. This section describes each data type in detail.

 **Note**

The order of each element in a data type structure is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- [DeploymentConditionalField](#)
- [DeploymentData](#)
- [DeploymentDataSummary](#)
- [DeploymentEventDataSummary](#)
- [DeploymentFilter](#)
- [DeploymentSpecificationsField](#)
- [WorkloadData](#)
- [WorkloadDataSummary](#)
- [WorkloadDeploymentPatternData](#)
- [WorkloadDeploymentPatternDataSummary](#)

# DeploymentConditionalField

A field that details a condition of the specifications for a deployment.

## Contents

### comparator

The comparator of the condition.

Valid values: `Equal` | `NotEqual`

Type: `String`

Required: `No`

### name

The name of the deployment condition.

Type: `String`

Required: `No`

### value

The value of the condition.

Type: `String`

Required: `No`

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DeploymentData

The data associated with a deployment.

## Contents

### **createdAt**

The time the deployment was created.

Type: Timestamp

Required: No

### **deletedAt**

The time the deployment was deleted.

Type: Timestamp

Required: No

### **deploymentArn**

The Amazon Resource Name (ARN) of the deployment.

Type: String

Required: No

### **id**

The ID of the deployment.

Type: String

Length Constraints: Minimum length of 2. Maximum length of 128.

Pattern: `^[a-zA-Z0-9-]+$`

Required: No

### **name**

The name of the deployment.

Type: String

Required: No

### **patternName**

The pattern name of the deployment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `^[A-Za-z0-9][a-zA-Z0-9-]*$`

Required: No

### **resourceGroup**

The resource group of the deployment.

Type: String

Required: No

### **specifications**

The settings specified for the deployment. These settings define how to deploy and configure your resources created by the deployment. For more information about the specifications required for creating a deployment for a SAP workload, see [SAP deployment specifications](#). To retrieve the specifications required to create a deployment for other workloads, use the [GetWorkloadDeploymentPattern](#) operation.

Type: String to string map

Map Entries: Maximum number of 100 items.

Key Length Constraints: Minimum length of 3. Maximum length of 256.

Key Pattern: `^[a-zA-Z0-9-:]+$`

Value Length Constraints: Minimum length of 1. Maximum length of 1500.

Required: No

### **status**

The status of the deployment.

Type: String

Valid Values: COMPLETED | CREATING | DELETE\_IN\_PROGRESS | DELETE\_INITIATING  
| DELETE\_FAILED | DELETED | FAILED | IN\_PROGRESS | VALIDATING

Required: No

## tags

Information about the tags attached to a deployment.

Type: String to string map

Map Entries: Maximum number of 200 items.

Key Length Constraints: Minimum length of 1. Maximum length of 128.

Key Pattern: `^(?!aws:)[a-zA-Z+-. _:/]+$`

Value Length Constraints: Minimum length of 0. Maximum length of 256.

Required: No

## workloadName

The name of the workload.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Pattern: `^[A-Za-z][a-zA-Z0-9-_*]$`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)



# DeploymentDataSummary

A summary of the deployment data.

## Contents

### **createdAt**

The time the deployment was created.

Type: Timestamp

Required: No

### **id**

The ID of the deployment.

Type: String

Length Constraints: Minimum length of 2. Maximum length of 128.

Pattern: `^[a-zA-Z0-9-]+$`

Required: No

### **name**

The name of the deployment

Type: String

Required: No

### **patternName**

The name of the workload deployment pattern.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `^[A-Za-z0-9][a-zA-Z0-9-]*$`

Required: No



## status

The status of the deployment.

Type: String

Valid Values: COMPLETED | CREATING | DELETE\_IN\_PROGRESS | DELETE\_INITIATING  
| DELETE\_FAILED | DELETED | FAILED | IN\_PROGRESS | VALIDATING

Required: No

## workloadName

The name of the workload.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Pattern: `^[A-Za-z][a-zA-Z0-9-_*]$`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DeploymentEventDataSummary

A summary of the deployment event data.

## Contents

### description

The description of the deployment event.

Type: String

Required: No

### name

The name of the deployment event.

Type: String

Required: No

### status

The status of the deployment event.

Type: String

Valid Values: CANCELED | CANCELING | COMPLETED | CREATED | FAILED | IN\_PROGRESS | PENDING | TIMED\_OUT

Required: No

### statusReason

The reason of the deployment event status.

Type: String

Required: No

### timestamp

The timestamp of the deployment event.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DeploymentFilter

A filter name and value pair that is used to return more specific results from a describe operation. Filters can be used to match a set of resources by specific criteria.

## Contents

### name

The name of the filter. Filter names are case-sensitive.

Type: String

Valid Values: WORKLOAD\_NAME | DEPLOYMENT\_STATUS

Required: No

### values

The filter values. Filter values are case-sensitive. If you specify multiple values for a filter, the values are joined with an OR, and the request returns all results that match any of the specified values.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 100.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DeploymentSpecificationsField

A field that details a specification of a deployment pattern.

## Contents

### allowedValues

The allowed values of the deployment specification.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 1500.

Required: No

### conditionals

The conditionals used for the deployment specification.

Type: Array of [DeploymentConditionalField](#) objects

Array Members: Minimum number of 1 item. Maximum number of 5 items.

Required: No

### description

The description of the deployment specification.

Type: String

Required: No

### name

The name of the deployment specification.

Type: String

Required: No

### required

Indicates if the deployment specification is required.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# WorkloadData

Describes a workload.

## Contents

### description

The description of a workload.

Type: String

Required: No

### displayName

The display name of a workload.

Type: String

Required: No

### documentationUrl

The URL of a workload document.

Type: String

Required: No

### iconUrl

The URL of a workload icon.

Type: String

Required: No

### status

The status of a workload.

Type: String

Valid Values: ACTIVE | INACTIVE | DISABLED | DELETED

Required: No

### **statusMessage**

The message about a workload's status.

Type: String

Required: No

### **workloadName**

The name of the workload.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Pattern: `^[A-Za-z][a-zA-Z0-9-_*]$`

Required: No

## **See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)



# WorkloadDataSummary

Describes workload data.

## Contents

### displayName

The display name of the workload data.

Type: String

Required: No

### workloadName

The name of the workload.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Pattern: `^[A-Za-z][a-zA-Z0-9-_*]$`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# WorkloadDeploymentPatternData

The data that details a workload deployment pattern.

## Contents

### deploymentPatternName

The name of the deployment pattern.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `^[A-Za-z0-9][a-zA-Z0-9-]*$`

Required: No

### description

The description of the deployment pattern.

Type: String

Required: No

### displayName

The display name of the deployment pattern.

Type: String

Required: No

### specifications

The settings specified for the deployment. These settings define how to deploy and configure your resources created by the deployment. For more information about the specifications required for creating a deployment for a SAP workload, see [SAP deployment specifications](#). To retrieve the specifications required to create a deployment for other workloads, use the [GetWorkloadDeploymentPattern](#) operation.

Type: Array of [DeploymentSpecificationsField](#) objects

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Required: No

### **status**

The status of the deployment pattern.

Type: String

Valid Values: ACTIVE | INACTIVE | DISABLED | DELETED

Required: No

### **statusMessage**

The status message of the deployment pattern.

Type: String

Required: No

### **workloadName**

The workload name of the deployment pattern.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Pattern: `^[A-Za-z][a-zA-Z0-9-]*$`

Required: No

### **workloadVersionName**

The workload version name of the deployment pattern.

Type: String

Length Constraints: Minimum length of 5. Maximum length of 30.

Pattern: `^[A-Za-z0-9][a-zA-Z0-9-]*$`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# WorkloadDeploymentPatternDataSummary

Describes a workload deployment pattern.

## Contents

### deploymentPatternName

The name of a workload deployment pattern.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `^[A-Za-z0-9][a-zA-Z0-9-]*$`

Required: No

### description

The description of a workload deployment pattern.

Type: String

Required: No

### displayName

The display name of a workload deployment pattern.

Type: String

Required: No

### status

The status of a workload deployment pattern.

Type: String

Valid Values: ACTIVE | INACTIVE | DISABLED | DELETED

Required: No

### statusMessage

A message about a workload deployment pattern's status.

Type: String

Required: No

### **workloadName**

The name of the workload.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Pattern: `^[A-Za-z][a-zA-Z0-9-]*$`

Required: No

### **workloadVersionName**

The name of the workload deployment pattern version.

Type: String

Length Constraints: Minimum length of 5. Maximum length of 30.

Pattern: `^[A-Za-z0-9][a-zA-Z0-9-]*$`

Required: No

## **See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SAP deployment specifications

This section details the specifications available for each SAP deployment type. Each deployment pattern has a different set of specifications that are either required or optional.

For NetWeaver patterns, you can specify which NetWeaver based applications running on HANA to install. For example, you might choose to install SAP S/4HANA, SAP BW/4HANA, or SAP Solution Manager.

## Note

If you need to retrieve specifications for other deployment types, use the [GetWorkloadDeploymentPattern](#) operation.

## Contents

- [SapHanaHA](#)
- [SapHanaMulti](#)
- [SapHanaSingle](#)
- [SapNWOnHanaHA](#)
- [SapNWOnHanaMulti](#)
- [SapNWOnHanaSingle](#)
- [SapNWOnAseSingle](#)

## SapHanaHA

The following is an example of the specifications required to create a SAP HANA high-availability deployment with HANA database software installed:

```
{
  "KeyPairName": "ExampleKeyPair",
  "VpcId": "vpc-a1b2c3d4",
  "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
  "AvailabilityZone2PrivateSubnet1Id": "subnet-22222222aaaaaaaa",
  "Timezone": "PST",
```

```

"EnableEbsVolumeEncryption": "Yes",
"EbsKmsKeyArn": "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
"CreateSecurityGroup": "No",
"DatabaseSecurityGroupId" : "sg-1234567890abcdef0",
"ApplicationSecurityGroupId" : "sg-1234567890abcdef0",
"SapSysGroupId": "5001",
"DatabaseSystemId": "HYD",
"DatabaseInstanceNumber": "10",
"DatabasePassword": "EXAMPLE-PASSWORD",
"InstallDatabaseSoftware": "Yes",
"DatabaseInstallationMediaS3Uri": "s3://launchwizardsoftware/sapmedia/database/
hana-20-sp06-rev60",
"DatabaseOperatingSystem": "SuSE-Linux-15-SP2-For-SAP-HVM",
"DatabaseAmiId": "ami-1234567890abcdef0",
"DatabasePrimaryHostname": "pri48hana",
"DatabaseSecondaryHostname": "sec48hana",
"DatabaseInstanceType" : "r5.4xlarge",
"InstallAwsBackintAgent" : "Yes",
"BackintSpecifications": "{ \"backintBucketName\": \"launchwizardsoftware\",
 \"backintBucketFolder\": \"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-
east-1\", \"backintKmsKeyArn\": \"arn:aws:kms:us-east-1:111122223333:alias/aws/
s3\", \"backintAgentVersion\": \"2.0.2.732\", \"backintContinueOnFailure\": \"No\",
 \"backintCreateEbsVolume\": \"No\" }",
"DatabaseVirtualIpAddress": "10.0.0.10",
"DatabasePrimarySiteName": "npristea8",
"DatabaseSecondarySiteName": "nsecstea8",
"DatabasePacemakerTag": "napact88",
"DisableDeploymentRollback": "Yes",
"SnsTopicArn" : "arn:aws:sns:us-east-1:111122223333:InstallStatus",
"SaveDeploymentArtifacts" : "Yes",
"DeploymentArtifactsS3Uri" : "s3://launchwizardsoftware",
"DatabaseLogVolumeType": "gp3"
}

```

The following list describes each specification input:

- **KeyPairName**

Type: String

Constraints: Up to 255 ASCII characters

Example: home



Description: The name of an existing Amazon EC2 key pair. All instances will launch with this key pair.

Required: Yes

- **VpcId**

Type: String

Example: vpc-01234567890

Description: The existing Amazon VPC where you want to deploy the system.

Required: Yes

- **AvailabilityZone1PrivateSubnet1Id**

Type: String

Example: subnet-11111111aaaaaaaa

Description: The existing private subnet where you want to deploy the system.

Required: Yes

- **AvailabilityZone2PrivateSubnet1Id**

Type: String

Example: subnet-22222222aaaaaaaa

Description: The additional private subnet that uses a different Availability Zone where you want to deploy the system.

Required: No

- **ProxyServerAddress**

Type: String

Example: http://10.x.x.x:8080

Description: The ProxyServerAddress address for http access. For example, *http://xyz.abc.com:8080* or *http://10.x.x.x:8080*.

Required: No

- **NoProxy**

Type: String

Example: http://10.x.x.x:8080

Description: A comma separated list of URLs, CIDR ranges, or IP addresses for which to disable ProxyServerAddress settings using the NO\_ProxyServerAddress environment variable. You can specify input for this specification when input has been provided for ProxyServerAddress. Any values you specify are appended to the default configuration for the NO\_ProxyServerAddress environment variable. The following entries are used by default:

```
NO_ProxyServerAddress="localhost,127.0.0.1,169.254.169.254,.internal,  
{VPC_CIDR_RANGE}"
```

Required: No

- **Timezone**

Type: String

Example: UTC

Description: The time zone to configure for your SAP resources.

Required: Yes

- **EnableEbsVolumeEncryption**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to encrypt the EBS volumes used for the deployment.

Required: Yes

- **EbsKmsKeyArn**

Type: String

Example: arn:aws:kms:us-west-2:111122223333:key/1234abcd-12ab-34cd-56ef-1234567890ab

Description: Specifies a KMS key ARN for encrypting EBS volumes when `EnableEbsVolumeEncryption` is set to Yes.

Conditional: If `EnableEbsVolumeEncryption` is Yes, you must specify a KMS key ARN.

Required: No

- **CreateSecurityGroup**

Type: String

AllowedValues: Yes | No

Description: Specifies whether you want to create new security groups for the deployment.

Required: Yes

- **NewSecurityGroupRules**

Type: String

Example: "[{"type": "ip", "value": "10.0.0.0/32"}, {"type": "securityGroupId", "value": "sg-0e1c107d640209244"}]"

Description: A list of CIDR blocks or Security Group IDs to be used for creating a new security group.

Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **NewDatabaseSecurityGroupName**

Type: String

Example: dbsgname

Description: The name of the database tier security group.

Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **NewApplicationSecurityGroupName**

Type: String

Example: dbsgname

Description: The name of the application tier security group.

Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **DatabaseSecurityGroupId**

Type: String

Example: sg-1234567890abcdef

Description: The security group ID for your HANA database.

Conditional: If you specify No for `CreateSecurityGroup`, you must provide an input for this configuration.

Required: No

- **DomainName**

Type: String

Example: example.com

Description: The domain name to be used for the deployment.

Required: No

- **HostedZoneName**

Type: String

Example: example.com

Description: The Amazon Route 53 hosted zone name.

Required: No

- **HostedZoneId**

Type: String

Example: Z36KTIQEXAMPLE

Description: Route 53 hosted zone id.

Conditional: If you specify a value for HostedZoneName, you must also provide input for this specification.

Required: No

- **DedicatedHostId**

Type: CommaDelimitedList String

Example: h-012a3456b7890cdef

Description: The existing Dedicated Hosts on which you want to launch your instances.

Conditional: If you are using Amazon EC2 High Memory Instances, you must provide an input for this specification. For more information on Amazon EC2 High Memory Instances, see [Amazon EC2 High Memory Instances](#).

Required: No

- **ConfigurationScripts**

Type: String

Example: {"preConfigurationScripts": {"onFailureBehaviour": "CONTINUE", "configurationScripts": [{"nodeTypesToRunScriptFor": ["DB"], "s3URL": "s3://launchwizard-scripts-preconfig-us-west-2/preconfig-install.sh", "sequence": "0"}]}, "postConfigurationScripts": {"onFailureBehaviour": "CONTINUE", "configurationScripts": [{"nodeTypesToRunScriptFor": ["DB"], "s3URL": "s3://launchwizard-scripts-postconfig-us-west-2/postconfig-install.sh", "sequence": "0"}]}}

Description: A list of pre- and post-configuration deployment scripts formatted as stringified JSON. You can specify one or more pre- or post-configuration scripts separately, or together. You must provide the follow details for each script:

- The URL for the script that has been uploaded to Amazon S3.
- The sequence number which specifies the order of execution.
- The type of node to run the script on. You can only specify DB for this deployment.
- The behavior to use should a failure or timeout occur when running the script. You can specify CONTINUE to proceed with the deployment or ROLLBACK to cancel the deployment.

Required: No

- **SapSysGroupId**

Type: String

Example: 1001

Description: GID for the sapsys group. The default GID is 1001.

Required: Yes

- **DatabaseSystemId**

Type: String

Constraints: This value must consist of 3 characters.

Example: HDB

Description: The SAP HANA system ID for installation and setup.

Required: Yes

- **DatabaseInstanceNumber**

Type: String

Constraints: The instance number must be between 00 and 97.

Example: 00

Description: The SAP HANA instance number to use for installation, setup, and to open ports for security groups.

Required: Yes

- **DatabasePassword**

Type: String

Description: The password must:

- Be between 10 and 13 alphanumeric characters.
- Not begin with a number or special character.
- Have at least one uppercase letter.
- Have at least one lowercase letter.
- Have at least one digit.
- Only use the following special characters: #, @, and \_.

Conditional: This specification is only required if Yes was specified for `InstallDatabaseSoftware`.

Required: Yes

- **DatabaseLogVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2 | fsx

Description: The Amazon EBS volume type, or FSx for ONTAP (if supported) file share, for database logging.

Conditional: If `fsx` is specified for `DatabaseLogVolumeType`, you must also specify `fsx` for `DatabaseDataVolumeType`.

Required: Yes

- **DatabaseOthersVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2

Default: gp3

Description: The Amazon EBS volume type for other file systems, including the root volume.

Conditional: If `fsx` is specified for `DatabaseDataVolumeType` and `DatabaseLogVolumeType`, you must provide input for this specification.

Required: No

- **InstallDatabaseSoftware**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP HANA software.

Required: Yes

- **DatabaseInstallationMediaS3Uri**

Type: String

Example: `s3://myhanabucket/sap-hana-sps11/`

Description: The full path to the Amazon S3 location with SAP HANA installation media.

Required: No

- **DatabaseOperatingSystem**

Type: String

Example: `SuSE-Linux-12-SP5-For-SAP-HVM`

Description: The operating system (including the version) for SAP HANA.

AllowedValues: `SuSE-Linux-12-SP4-HVM` | `SuSE-Linux-12-SP4-For-SAP-HVM` | `SuSE-Linux-12-SP5-HVM` | `SuSE-Linux-12-SP5-For-SAP-HVM` | `SuSE-Linux-15-HVM` | `SuSE-Linux-15-For-SAP-HVM` | `SuSE-Linux-15-SP1-HVM` | `SuSE-Linux-15-SP1-For-SAP-HVM` | `SuSE-Linux-15-SP2-HVM` | `SuSE-Linux-15-SP2-For-SAP-HVM` | `SuSE-Linux-15-SP3-HVM` | `SuSE-Linux-15-SP3-For-SAP-HVM` | `SuSE-Linux-15-SP4-HVM` | `SuSE-Linux-15-SP4-For-SAP-HVM` | `Red-Hat-Enterprise-Linux-7.6-`



For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.7-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.9-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.1-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.2-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.4-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.6-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.6-BYOS | Red-Hat-Enterprise-Linux-7.7-BYOS | Red-Hat-Enterprise-Linux-8.1-BYOS | Red-Hat-Enterprise-Linux-8.2-BYOS | Red-Hat-Enterprise-Linux-8.4-BYOS | Red-Hat-Enterprise-Linux-8.6-BYOS | SuSE-Linux-12-SP4-For-SAP-BYOS-HVM | SuSE-Linux-12-SP5-For-SAP-BYOS-HVM | SuSE-Linux-15-For-SAP-BYOS-HVM | SuSE-Linux-15-SP1-For-SAP-BYOS-HVM | SuSE-Linux-15-SP2-For-SAP-BYOS-HVM | SuSE-Linux-15-SP3-For-SAP-BYOS-HVM | SuSE-Linux-15-SP4-For-SAP-BYOS-HVM

Required: Yes

- **DatabaseAmiId**

Type: String

Example: ami-1111111111111111

Description: The AMI ID to use for the SAP HANA nodes. The AMI can be provided by Amazon, sourced from AWS Marketplace, or with Bring your own images (BYOI). If the AMI from AWS Marketplace is using the Bring Your Own Subscription model (BYOS), you must provide the registration code for SUSE distributions or an account and password for RHEL distributions.

Required: Yes

- **DatabaseSlesByosRegistrationCode**

Type: String

Description: The SLES registration code for Bring Your Own Subscription model (BYOS) images.

Conditional: If you specify SUSE as the operating system, and it uses BYOS, you must also provide input for this specification.

Required: No

- **DatabaseRhelByosUserName**

Type: String

Example: admin

Description: The username in the Red Hat Enterprise Linux (RHEL) operating system to use.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **DatabaseRhelByosUserPassword**

Type: String

Description: The password for the user specified in DatabaseRhelByosUserName.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **DatabasePrimaryHostname**

Type: String

Example: HanaPrimary

Description: The host name or DNS short name to use for the primary SAP HANA node.

Required: Yes

- **DatabaseSecondaryHostName**

Type: String

Example: SecondaryHostName

Description: The host name or DNS short name to use for the secondary node.

Required: Yes

- **DatabaseInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for SAP HANA nodes.

Required: Yes

- **InstallAwsBackintAgent**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install the AWS Backint Agent for SAP HANA.

Conditional: This specification can only used in this deployment pattern if `InstallDatabaseSoftware` is specified as Yes.

Required: Yes

- **BackintSpecifications**

Type: String

Example:

```
"{\"backintBucketName\": \"ExampleBucket\", \"backintBucketFolder\": \"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-east-1\", \"backintKmsKeyArn\": \"arn:aws:kms:us-east-1:111122223333:alias/aws/s3\", \"backintAgentVersion\": \"2.0.2.732\", \"backintContinueOnFailure\": \"No\", \"backintCreateEbsVolume\": \"No\"}"
```

Description: Parameters for the AWS Backint Agent for SAP HANA formatted as stringified JSON.

Conditional: If you specify Yes for `InstallAwsBackintAgent`, you must also provide input for this specification.

Required: No

- **DatabasePrimaryByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the primary SAP HANA node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **DatabaseStandbyByoips**

Type: String

Example: 10.0.1.11

Description: A private IPv4 address to be used by the standby SAP HANA node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **DatabaseVirtualIpAddress**

Type: String

Example: 192.168.1.99

Description: The overlay IP address to assign to the active node. The overlay IP is configured to always point to the primary SAP HANA node. The address should be from one of the following CIDR blocks: 10.0.0.0/8, 172.16.0.0/12, 192.168.0.0/16, or 100.64.0.0/10. The IP address should also be outside of the VPC CIDR block and must not be used by any other HA cluster.

Required: Yes

- **DatabasePrimarySiteName**

Type: String

Example: HAP

Description: The primary HANA site name for SAP HANA System Replication (HSR).

Required: Yes

- **DatabaseSecondarySiteName**

Type: String

Example: HAS

Description: The secondary HANA site name for SAP HANA System Replication (HSR).

Required: Yes

- **DatabasePacemakerTag**

Type: String

Example: PaceTag

Description: Pacemaker tag name. This value should not be used by any other instances in your AWS account.

Required: Yes

- **DatabaseLogFsxVolumeSize**

Type: Number

Example: 50

Description: The volume size of the SAP HANA log volume on Amazon FSx, in GBs.

Conditional: If you specify fsx for DatabaseLogVolumeType, you must also provide input for this specification.

Required: No

- **DatabaseOtherFsxVolumeSize**

Type: Number

Example: 50

Description: The volume size of the other SAP HANA volume on Amazon FSx, in GBs.

Conditional: If you specify fsx for DatabaseOthersVolumeType, you must also provide input for this specification.

Required: No

- **CustomerTags**

Type: String

Example: "[{"key":"test-key","value":"test-value"}]"

Description: The tags to add to resources created by this deployment formatted as stringified JSON.

Required: No

- **SnsTopicArn**

Type: String

Example: arn:aws:sns:us-east-1:1234567890:Test-Topic

Description: The Amazon SNS topic used to receive the final deployment status from Launch Wizard.

Required: No

- **DisableDeploymentRollback**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to disable rollback of the AWS CloudFormation stack if the stack creation fails.

Required: Yes

- **SaveDeploymentArtifacts**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to save the deployment artifacts in Service Catalog after deployment is complete.

Required: Yes

- **DeploymentArtifactsS3Uri**

Type: String

Example: s3://save-test-us-east-1

Description: The Amazon S3 URI in which to save the deployment artifacts for Service Catalog.

Required: No

## SapHanaMulti

The following is an example of the specifications required to create a SAP HANA deployment with multiple nodes and HANA database software installed:

```
{
  "KeyName": "ExampleKeyPair",
  "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
  "VpcId": "vpc-a1b2c3d4",
  "Timezone" : "PST",
  "EnableEbsVolumeEncryption" : "Yes",
  "EbsKmsKeyArn": "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
  "DatabaseSecurityGroupId" : "sg-1234567890abcdef0",
  "ApplicationSecurityGroupId" : "sg-1234567890abcdef0",
  "CreateSecurityGroup": "No",
  "SapSysGroupId" : "5002",
  "DatabaseSystemId" : "HYD",
  "DatabaseInstanceNumber": "00",
  "DatabasePassword" : "EXAMPLE-PASSWORD",
  "InstallDatabaseSoftware" : "Yes",
  "DatabaseInstallationMediaS3Uri" : "s3://launchwizardsoftware/sapmedia/database/
hana-20-sp06-rev60",
  "DatabaseOperatingSystem": "SuSE-Linux-15-SP2-For-SAP-HVM",
  "DatabaseAmiId" : "ami-1234567890abcdef0",
  "DatabasePrimaryHostname" : "hanasingle",
  "DatabaseSubordinateHostnames" : "hanasub1,hanasub2",
  "DatabaseHostCount" : "3",
  "DatabaseInstanceType" : "r5.4xlarge",
  "InstallAwsBackintAgent" : "Yes",
  "BackintSpecifications": "{ \"backintBucketName\": \"launchwizardsoftware\",
  \"backintBucketFolder\": \"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-
east-1\", \"backintKmsKeyArn\": \"arn:aws:kms:us-east-1:111122223333:alias/aws/
s3\", \"backintAgentVersion\": \"2.0.2.732\", \"backintContinueOnFailure\": \"No\",
  \"backintCreateEbsVolume\": \"No\" }",
  "DisableDeploymentRollback" : "Yes",
  "SnsTopicArn" : "arn:aws:sns:us-east-1:111122223333:InstallStatus",
  "SaveDeploymentArtifacts" : "Yes",
```

```
"DeploymentArtifactsS3Uri" : "s3://launchwizardsoftware",  
"DatabaseAutomaticRecovery": "Yes",  
"DatabaseLogVolumeType": "gp3"  
}
```

The following list describes each specification input:

- **KeyPairName**

Type: String

Constraints: Up to 255 ASCII characters

Example: home

Description: The name of an existing Amazon EC2 key pair. All instances will launch with this key pair.

Required: Yes

- **VpcId**

Type: String

Example: vpc-01234567890

Description: The existing Amazon VPC where you want to deploy the system.

Required: Yes

- **AvailabilityZone1PrivateSubnet1Id**

Type: String

Example: subnet-11111111aaaaaaaa

Description: The existing private subnet where you want to deploy the system.

Required: Yes

- **ProxyServerAddress**

Type: String

Example: http://10.x.x.x:8080



Description: The ProxyServerAddress address for http access. For example, *http://xyz.abc.com:8080* or *http://10.x.x.x:8080*.

Required: No

- **NoProxy**

Type: String

Example: http://10.x.x.x:8080

Description: A comma separated list of URLs, CIDR ranges, or IP addresses for which to disable ProxyServerAddress settings using the NO\_ProxyServerAddress environment variable. You can specify input for this specification when input has been provided for ProxyServerAddress. Any values you specify are appended to the default configuration for the NO\_ProxyServerAddress environment variable. The following entries are used by default:

```
NO_ProxyServerAddress="localhost,127.0.0.1,169.254.169.254,.internal,{VPC_CIDR_RANGE}"
```

Required: No

- **Timezone**

Type: String

Example: UTC

Description: The time zone to configure for your SAP resources.

Required: Yes

- **EnableEbsVolumeEncryption**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to encrypt the EBS volumes used for the deployment.

Required: Yes

- **EbsKmsKeyArn**

Type: String

Example: `arn:aws:kms:us-west-2:111122223333:key/1234abcd-12ab-34cd-56ef-1234567890ab`

Description: Specifies a KMS key ARN for encrypting EBS volumes when `EnableEbsVolumeEncryption` is set to Yes.

Conditional: If `EnableEbsVolumeEncryption` is Yes, you must specify a KMS key ARN.

Required: No

- **CreateSecurityGroup**

Type: String

AllowedValues: Yes | No

Description: Specifies whether you want to create new security groups for the deployment.

Required: Yes

- **NewSecurityGroupRules**

Type: String

Example: `"[{"type\":"ip\","value\":"10.0.0.0/32\"}, {"type\":"securityGroupId\","value\":"sg-0e1c107d640209244\"}]"`

Description: A list of CIDR blocks or Security Group IDs to be used for creating a new security group.

Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **NewDatabaseSecurityGroupName**

Type: String

Example: `dbsgname`

Description: The name of the database tier security group.

Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **NewApplicationSecurityGroupName**

Type: String

Example: `dbsgname`

Description: The name of the application tier security group.

Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **DatabaseSecurityGroupId**

Type: String

Example: `sg-1234567890abcdef`

Description: The security group ID for your HANA database.

Conditional: If you specify No for `CreateSecurityGroup`, you must provide an input for this configuration.

Required: No

- **DomainName**

Type: String

Example: `example.com`

Description: The domain name to be used for the deployment.

Required: No

- **HostedZoneName**

Type: String

Example: example.com

Description: The Amazon Route 53 hosted zone name.

Required: No

- **HostedZoneId**

Type: String

Example: Z36KTIQEXAMPLE

Description: Route 53 hosted zone id.

Conditional: If you specify a value for HostedZoneName, you must also provide input for this specification.

Required: No

- **DedicatedHostId**

Type: CommaDelimitedList String

Example: h-012a3456b7890cdef

Description: The existing Dedicated Hosts on which you want to launch your instances.

Conditional: If you are using Amazon EC2 High Memory Instances, you must provide an input for this specification. For more information on Amazon EC2 High Memory Instances, see [Amazon EC2 High Memory Instances](#).

Required: No

- **ConfigurationScripts**

Type: String

Example: {"preConfigurationScripts": {"onFailureBehaviour": "*CONTINUE*", "configurationScripts": [{"nodeTypesToRunScriptFor": ["DB"], "s3URL": "*s3://launchwizard-scripts-preconfig-us-west-2/preconfig-install.sh*", "sequence": "*0*"}]}, "postConfigurationScripts": {"onFailureBehaviour": "*CONTINUE*", "configurationScripts":

```
[{"nodeTypesToRunScriptFor":["DB"],"s3URL":"s3://launchwizard-scripts-postconfig-us-west-2/postconfig-install.sh","sequence":"0"}]}
```

Description: A list of pre- and post-configuration deployment scripts formatted as stringified JSON. You can specify one or more pre- or post-configuration scripts separately, or together. You must provide the follow details for each script:

- The URL for the script that has been uploaded to Amazon S3.
- A sequence number which specifies the order of execution.
- The type of node to run the script on. You can only specify DB for this deployment.
- The behavior to use should a failure or timeout occur when running the script. You can specify CONTINUE to proceed with the deployment or ROLLBACK to cancel the deployment.

Required: No

- **SapSysGroupId**

Type: String

Example: 1001

Description: GID for the sapsys group. The default GID is 1001.

Required: Yes

- **DatabaseSystemId**

Type: String

Constraints: This value must consist of 3 characters.

Example: HDB

Description: The SAP HANA system ID for installation and setup.

Required: Yes

- **DatabaseInstanceNumber**

Type: String

Constraints: The instance number must be between 00 and 97.

Example: 00

Description: The SAP HANA instance number to use for installation, setup, and to open ports for security groups.

Required: Yes

- **DatabasePassword**

Type: String

Description: The password must:

- Be between 10 and 13 alphanumeric characters.
- Not begin with a number or special character.
- Have at least one uppercase letter.
- Have at least one lowercase letter.
- Have at least one digit.
- Only use the following special characters: #, @, and \_.

Conditional: This specification is only required if Yes was specified for `InstallDatabaseSoftware`.

Required: Yes

- **DatabaseLogVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2 | fsx

Description: The Amazon EBS volume type, or FSx for ONTAP (if supported) file share, for database logging.

Conditional: If `fsx` is specified for `DatabaseLogVolumeType`, you must also specify `fsx` for `DatabaseDataVolumeType`.

Required: Yes

- **DatabaseOthersVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2

Default: gp3

Description: The Amazon EBS volume type for other file systems, including the root volume.

Conditional: If fsx is specified for DatabaseDataVolumeType and DatabaseLogVolumeType, you must provide input for this specification.

Required: No

- **InstallDatabaseSoftware**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP HANA software.

Required: Yes

- **DatabaseInstallationMediaS3Uri**

Type: String

Example: s3://myhanabucket/sap-hana-sps11/

Description: The full path to the Amazon S3 location with SAP HANA installation media.

Required: No

- **DatabaseOperatingSystem**

Type: String

Example: SuSE-Linux-12-SP5-For-SAP-HVM

Description: The operating system (including the version) for SAP HANA.

AllowedValues: SuSE-Linux-12-SP4-HVM | SuSE-Linux-12-SP4-For-SAP-HVM | SuSE-Linux-12-SP5-HVM | SuSE-Linux-12-SP5-For-SAP-HVM | SuSE-Linux-15-HVM | SuSE-Linux-15-For-SAP-HVM | SuSE-Linux-15-SP1-HVM | SuSE-Linux-15-SP1-For-SAP-HVM | SuSE-Linux-15-SP2-HVM | SuSE-Linux-15-SP2-For-SAP-HVM | SuSE-Linux-15-SP3-HVM | SuSE-Linux-15-SP3-For-SAP-HVM | SuSE-Linux-15-SP4-HVM | SuSE-Linux-15-SP4-For-SAP-HVM | Red-Hat-Enterprise-Linux-7.6-

For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.7-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.9-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.1-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.2-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.4-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.6-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.6-BYOS | Red-Hat-Enterprise-Linux-7.7-BYOS | Red-Hat-Enterprise-Linux-8.1-BYOS | Red-Hat-Enterprise-Linux-8.2-BYOS | Red-Hat-Enterprise-Linux-8.4-BYOS | Red-Hat-Enterprise-Linux-8.6-BYOS | SuSE-Linux-12-SP4-For-SAP-BYOS-HVM | SuSE-Linux-12-SP5-For-SAP-BYOS-HVM | SuSE-Linux-15-For-SAP-BYOS-HVM | SuSE-Linux-15-SP1-For-SAP-BYOS-HVM | SuSE-Linux-15-SP2-For-SAP-BYOS-HVM | SuSE-Linux-15-SP3-For-SAP-BYOS-HVM | SuSE-Linux-15-SP4-For-SAP-BYOS-HVM

Required: Yes

- **DatabaseAmiId**

Type: String

Example: ami-1111111111111111

Description: The AMI ID to use for the SAP HANA nodes. The AMI can be provided by Amazon, sourced from AWS Marketplace, or with Bring your own images (BYOI). If the AMI from AWS Marketplace is using the Bring Your Own Subscription model (BYOS), you must provide the registration code for SUSE distributions or an account and password for RHEL distributions.

Required: Yes

- **DatabaseSlesByosRegistrationCode**

Type: String

Description: The SLES registration code for Bring Your Own Subscription model (BYOS) images.

Conditional: If you specify SUSE as the operating system, and it uses BYOS, you must also provide input for this specification.

Required: No

- **DatabaseRhelByosUserName**

Type: String



Example: admin

Description: The username in the Red Hat Enterprise Linux (RHEL) operating system to use.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **DatabaseRhelByosUserPassword**

Type: String

Description: The password for the user specified in DatabaseRhelByosUserName.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **DatabasePrimaryHostname**

Type: String

Example: HanaPrimary

Description: The host name or DNS short name to use for the primary SAP HANA node.

Required: Yes

- **DatabaseSubordinateHostnames**

Type: String

Example: SubordinateName1,SubordinateName2

Description: A comma-separated list of the host names or DNS short names to use for the subordinate nodes.

Required: Yes

- **DatabaseAutomaticRecovery**

Type: String

AllowedValues: Yes | No

Description: Specify Yes to enable Amazon CloudWatch action based recovery for SAP Hana nodes or No to keep it disabled. For HA deployments, set this value to No as the cluster will manage availability for the nodes.

Required: Yes

- **DatabaseInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for SAP HANA nodes.

Required: Yes

- **InstallAwsBackintAgent**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install the AWS Backint Agent for SAP HANA.

Conditional: This specification can only used in this deployment pattern if `InstallDatabaseSoftware` is specified as Yes.

Required: Yes

- **BackintSpecifications**

Type: String

Example:

```
{\"backintBucketName\": \"ExampleBucket\", \"backintBucketFolder\":  
  \"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-east-1\", \"backintKmsKeyArn  
  \": \"arn:aws:kms:us-east-1:111122223333:alias/aws/s3\", \"backintAgentVersion\":  
  \"2.0.2.732\", \"backintContinueOnFailure\": \"No\", \"backintCreateEbsVolume\": \"No\"}
```

Description: Parameters for the AWS Backint Agent for SAP HANA formatted as stringified JSON.

Conditional: If you specify Yes for `InstallAwsBackintAgent`, you must also provide input for this specification.

Required: No

- **DatabasePrimaryByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the primary SAP HANA node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **DatabaseSubordinateByoips**

Type: String

Example: 10.0.1.11

Description: A private IPv4 address to be used by the secondary SAP HANA node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **DatabaseHostCount**

Type: Number

Min: 2

Max: 17

Description: The number of hosts to deploy.

Required: Yes

- **DatabaseHostAutoFailover**

Type: String

AllowedValues: Yes | No

Description: Specified whether the SAP HANA host should use automatic failover.

Conditional: If you specify `fsx` for your volume types, you must also provide input for this specification.

Required: Yes

- **DatabaseStandbyNodeCount**

Type: Number

Min: 0

Max: 17

Description: The number of SAP HANA standby hosts to deploy.

Conditional: If you specify `fsx` for your volume types and `DatabaseHostAutoFailover` is set to Yes, you must also provide input for this specification.

Required: Yes

- **DatabaseStandbyHostnames**

Type: String

Example: `standby1, standby2, standby3`

Description: The host names, or DNS short names, to use for the SAP HANA standby nodes. You can specify multiple values as a comma-separated list.

Conditional: If you specify `fsx` for your volume types, you must also provide input for this specification.

Required: No

- **DatabaseStandbyByoips**

Type: String

Example: `10.0.1.11`

Description: A private IPv4 address to be used by the standby SAP HANA node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **DatabaseDataFsxVolumeSize**

Type: Number

Example: 500

Description: The volume size of the SAP HANA data volume on Amazon FSx, in GBs.

Conditional: If you specify `fsx` for `DatabaseDataVolumeType`, you must also provide input for this specification.

Required: No

- **DatabaseLogFsxVolumeSize**

Type: Number

Example: 50

Description: The volume size of the SAP HANA log volume on Amazon FSx, in GBs.

Conditional: If you specify `fsx` for `DatabaseLogVolumeType`, you must also provide input for this specification.

Required: No

- **DatabaseOtherFsxVolumeSize**

Type: Number

Example: 50

Description: The volume size of the other SAP HANA volume on Amazon FSx, in GBs.

Conditional: If you specify `fsx` for `DatabaseOthersVolumeType`, you must also provide input for this specification.

Required: No

- **SnsTopicArn**

Type: String

Example: arn:aws:sns:us-east-1:1234567890:Test-Topic

Description: The Amazon SNS topic used to receive the final deployment status from Launch Wizard.

Required: No

- **DisableDeploymentRollback**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to disable rollback of the AWS CloudFormation stack if the stack creation fails.

Required: Yes

- **SaveDeploymentArtifacts**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to save the deployment artifacts in Service Catalog after deployment is complete.

Required: Yes

- **DeploymentArtifactsS3Uri**

Type: String

Example: s3://save-test-us-east-1

Description: The Amazon S3 URI in which to save the deployment artifacts for Service Catalog.

Required: No

# SapHanaSingle

The following is an example of the specifications required to create a SAP HANA single-node deployment with HANA database software installed:

```
{
  "KeyName": "ExampleKeyPair",
  "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
  "VpcId": "vpc-a1b2c3d4",
  "Timezone": "PST",
  "EnableEbsVolumeEncryption": "Yes",
  "EbsKmsKeyArn": "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
  "DatabaseSecurityGroupId": "sg-1234567890abcdef0",
  "ApplicationSecurityGroupId": "sg-1234567890abcdef0",
  "CreateSecurityGroup": "No",
  "SapSysGroupId": "5002",
  "DatabaseSystemId": "HYD",
  "DatabaseInstanceNumber": "00",
  "DatabasePassword": "EXAMPLE-PASSWORD",
  "InstallDatabaseSoftware": "Yes",
  "DatabaseInstallationMediaS3Uri": "s3://launchwizardsoftware/sapmedia/database/
hana-20-sp06-rev60",
  "DatabaseOperatingSystem": "SuSE-Linux-15-SP2-For-SAP-HVM",
  "DatabaseAmiId": "ami-1234567890abcdef0",
  "DatabasePrimaryHostname": "hanasingle",
  "DatabaseInstanceType": "r5.4xlarge",
  "InstallAwsBackintAgent": "Yes",
  "BackintSpecifications": "{\"backintBucketName\": \"launchwizardsoftware\",
\"backintBucketFolder\": \"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-
east-1\", \"backintKmsKeyArn\": \"arn:aws:kms:us-east-1:111122223333:alias/aws/
s3\", \"backintAgentVersion\": \"2.0.2.732\", \"backintContinueOnFailure\": \"No\",
\"backintCreateEbsVolume\": \"No\"}",
  "DisableDeploymentRollback": "Yes",
  "SnsTopicArn": "arn:aws:sns:us-east-1:111122223333:InstallStatus",
  "SaveDeploymentArtifacts": "Yes",
  "DeploymentArtifactsS3Uri": "s3://launchwizardsoftware",
  "DatabaseAutomaticRecovery": "Yes",
  "DatabaseLogVolumeType": "gp3"
}
```

The following list describes each specification input:

- **KeyName**

Type: String

Constraints: Up to 255 ASCII characters

Example: home

Description: The name of an existing Amazon EC2 key pair. All instances will launch with this key pair.

Required: Yes

- **VpcId**

Type: String

Example: vpc-01234567890

Description: The existing Amazon VPC where you want to deploy the system.

Required: Yes

- **AvailabilityZone1PrivateSubnet1Id**

Type: String

Example: subnet-11111111aaaaaaaa

Description: The existing private subnet where you want to deploy the system.

Required: Yes

- **ProxyServerAddress**

Type: String

Example: http://10.x.x.x:8080

Description: The ProxyServerAddress address for http access. For example, *http://xyz.abc.com:8080* or *http://10.x.x.x:8080*.

Required: No

- **NoProxy**

Type: String



Example: `http://10.x.x.x:8080`

Description: A comma separated list of URLs, CIDR ranges, or IP addresses for which to disable ProxyServerAddress settings using the NO\_ProxyServerAddress environment variable. You can specify input for this specification when input has been provided for ProxyServerAddress. Any values you specify are appended to the default configuration for the NO\_ProxyServerAddress environment variable. The following entries are used by default:

```
NO_ProxyServerAddress="localhost,127.0.0.1,169.254.169.254,.internal,
{VPC_CIDR_RANGE}"
```

Required: No

- **Timezone**

Type: String

Example: UTC

Description: The time zone to configure for your SAP resources.

Required: Yes

- **EnableEbsVolumeEncryption**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to encrypt the EBS volumes used for the deployment.

Required: Yes

- **EbsKmsKeyArn**

Type: String

Example: `arn:aws:kms:us-west-2:111122223333:key/1234abcd-12ab-34cd-56ef-1234567890ab`

Description: Specifies a KMS key ARN for encrypting EBS volumes when EnableEbsVolumeEncryption is set to Yes.

Conditional: If EnableEbsVolumeEncryption is Yes, you must specify a KMS key ARN.

Required: No

- **CreateSecurityGroup**

Type: String

AllowedValues: Yes | No

Description: Specifies whether you want to create new security groups for the deployment.

Required: Yes

- **NewSecurityGroupRules**

Type: String

Example: "[{"type":"ip","value":"10.0.0.0/32"}, {"type":  
"securityGroupId","value":"sg-0e1c107d640209244"}]"

Description: A list of CIDR blocks or Security Group IDs to be used for creating a new security group.

Conditional: If you specify Yes for CreateSecurityGroup, you must also provide input for this configuration.

Required: No

- **NewDatabaseSecurityGroupName**

Type: String

Example: dbsgname

Description: The name of the database tier security group.

Conditional: If you specify Yes for CreateSecurityGroup, you must also provide input for this configuration.

Required: No

- **NewApplicationSecurityGroupName**

Type: String

Example: dbsgname

Description: The name of the application tier security group.

Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **DatabaseSecurityGroupId**

Type: String

Example: sg-1234567890abcdef

Description: The security group ID for your HANA database.

Conditional: If you specify No for `CreateSecurityGroup`, you must provide an input for this configuration.

Required: No

- **DomainName**

Type: String

Example: example.com

Description: The domain name to be used for the deployment.

Required: No

- **HostedZoneName**

Type: String

Example: example.com

Description: The Amazon Route 53 hosted zone name.

Required: No

- **HostedZoneId**

Type: String

Example: Z36KTIQEXAMPLE

Description: Route 53 hosted zone id.

Conditional: If you specify a value for HostedZoneName, you must also provide input for this specification.

Required: No

- **DedicatedHostId**

Type: CommaDelimitedList String

Example: h-012a3456b7890cdef

Description: The existing Dedicated Hosts on which you want to launch your instances.

Conditional: If you are using Amazon EC2 High Memory Instances, you must provide an input for this specification. For more information on Amazon EC2 High Memory Instances, see [Amazon EC2 High Memory Instances](#).

Required: No

- **ConfigurationScripts**

Type: String

Example: {"preConfigurationScripts": [{"onFailureBehaviour": "*CONTINUE*", "configurationScripts": [{"nodeTypesToRunScriptFor": ["DB"], "s3URL": "*s3://launchwizard-scripts-preconfig-us-west-2/preconfig-install.sh*", "sequence": "*0*"}]}, {"postConfigurationScripts": [{"onFailureBehaviour": "*CONTINUE*", "configurationScripts": [{"nodeTypesToRunScriptFor": ["DB"], "s3URL": "*s3://launchwizard-scripts-postconfig-us-west-2/postconfig-install.sh*", "sequence": "*0*"}]}]}

Description: A list of pre- and post-configuration deployment scripts formatted as stringified JSON. You can specify one or more pre- or post-configuration scripts separately, or together. You must provide the follow details for each script:

- The URL for the script that has been uploaded to Amazon S3.
- A sequence number which specifies the order of execution.

- The type of node to run the script on. You can only specify DB for.
- The behavior to use should a failure or timeout occur when running the script. You can specify CONTINUE to proceed with the deployment or ROLLBACK to cancel the deployment.

Required: No

- **SapSysGroupId**

Type: String

Example: 1001

Description: GID for the sapsys group. The default GID is 1001.

Required: Yes

- **DatabaseSystemId**

Type: String

Constraints: This value must consist of 3 characters.

Example: HDB

Description: The SAP HANA system ID for installation and setup.

Required: Yes

- **DatabaseInstanceNumber**

Type: String

Constraints: The instance number must be between 00 and 97.

Example: 00

Description: The SAP HANA instance number to use for installation, setup, and to open ports for security groups.

Required: Yes

- **DatabasePassword**

Type: String

Description: The password must:

- Be between 10 and 13 alphanumeric characters.
- Not begin with a number or special character.
- Have at least one uppercase letter.
- Have at least one lowercase letter.
- Have at least one digit.
- Only use the following special characters: #, @, and \_.

Conditional: This specification is only required if Yes was specified for `InstallDatabaseSoftware`.

Required: Yes

- **DatabaseLogVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2 | fsx

Description: The Amazon EBS volume type, or FSx for ONTAP (if supported) file share, for database logging.

Conditional: If `fsx` is specified for `DatabaseLogVolumeType`, you must also specify `fsx` for `DatabaseDataVolumeType`.

Required: Yes

- **DatabaseOthersVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2

Default: gp3

Description: The Amazon EBS volume type for other file systems, including the root volume.

Conditional: If `fsx` is specified for `DatabaseDataVolumeType` and `DatabaseLogVolumeType`, you must provide input for this specification.

Required: No

- **InstallDatabaseSoftware**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP HANA software.

Required: Yes

- **DatabaseInstallationMediaS3Uri**

Type: String

Example: s3://myhanabucket/sap-hana-sps11/

Description: The full path to the Amazon S3 location with SAP HANA installation media.

Required: No

- **DatabaseOperatingSystem**

Type: String

Example: SuSE-Linux-12-SP5-For-SAP-HVM

Description: The operating system (including the version) for SAP HANA.

AllowedValues: SuSE-Linux-12-SP4-HVM | SuSE-Linux-12-SP4-For-SAP-HVM | SuSE-Linux-12-SP5-HVM | SuSE-Linux-12-SP5-For-SAP-HVM | SuSE-Linux-15-HVM | SuSE-Linux-15-For-SAP-HVM | SuSE-Linux-15-SP1-HVM | SuSE-Linux-15-SP1-For-SAP-HVM | SuSE-Linux-15-SP2-HVM | SuSE-Linux-15-SP2-For-SAP-HVM | SuSE-Linux-15-SP3-HVM | SuSE-Linux-15-SP3-For-SAP-HVM | SuSE-Linux-15-SP4-HVM | SuSE-Linux-15-SP4-For-SAP-HVM | Red-Hat-Enterprise-Linux-7.6-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.7-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.9-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.1-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.2-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.4-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.6-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.6-BYOS | Red-Hat-Enterprise-Linux-7.7-BYOS | Red-Hat-Enterprise-Linux-8.1-

BYOS | Red-Hat-Enterprise-Linux-8.2-BYOS | Red-Hat-Enterprise-Linux-8.4-BYOS | Red-Hat-Enterprise-Linux-8.6-BYOS | SuSE-Linux-12-SP4-For-SAP-BYOS-HVM | SuSE-Linux-12-SP5-For-SAP-BYOS-HVM | SuSE-Linux-15-For-SAP-BYOS-HVM | SuSE-Linux-15-SP1-For-SAP-BYOS-HVM | SuSE-Linux-15-SP2-For-SAP-BYOS-HVM | SuSE-Linux-15-SP3-For-SAP-BYOS-HVM | SuSE-Linux-15-SP4-For-SAP-BYOS-HVM

Required: Yes

- **DatabaseAmiId**

Type: String

Example: ami-1111111111111111

Description: The AMI ID to use for the SAP HANA nodes. The AMI can be provided by Amazon, sourced from AWS Marketplace, or with Bring your own images (BYOI). If the AMI from AWS Marketplace is using the Bring Your Own Subscription model (BYOS), you must provide the registration code for SUSE distributions or an account and password for RHEL distributions.

Required: Yes

- **DatabaseSlesByosRegistrationCode**

Type: String

Description: The SLES registration code for Bring Your Own Subscription model (BYOS) images.

Conditional: If you specify SUSE as the operating system, and it uses BYOS, you must also provide input for this specification.

Required: No

- **DatabaseRhelByosUserName**

Type: String

Example: admin

Description: The username in the Red Hat Enterprise Linux (RHEL) operating system to use.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.



Required: No

- **DatabaseRhelByosUserPassword**

Type: String

Description: The password for the user specified in DatabaseRhelByosUserName.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **DatabasePrimaryHostname**

Type: String

Example: HanaPrimary

Description: The host name or DNS short name to use for the primary SAP HANA node.

Required: Yes

- **DatabaseAutomaticRecovery**

Type: String

AllowedValues: Yes | No

Description: Specify Yes to enable Amazon CloudWatch action based recovery for SAP Hana nodes or No to keep it disabled. For HA deployments, set this value to No as the cluster will manage availability for the nodes.

Required: Yes

- **DatabaseInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for SAP HANA nodes.

Required: Yes

- **InstallAwsBackintAgent**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install the AWS Backint Agent for SAP HANA.

Conditional: This specification can only used in this deployment pattern if `InstallDatabaseSoftware` is specified as Yes.

Required: Yes

- **BackintSpecifications**

Type: String

Example:

```
{\"backintBucketName\": \"ExampleBucket\", \"backintBucketFolder\": \"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-east-1\", \"backintKmsKeyArn\": \"arn:aws:kms:us-east-1:111122223333:alias/aws/s3\", \"backintAgentVersion\": \"2.0.2.732\", \"backintContinueOnFailure\": \"No\", \"backintCreateEbsVolume\": \"No\"}
```

Description: Parameters for the AWS Backint Agent for SAP HANA formatted as stringified JSON.

Conditional: If you specify Yes for `InstallAwsBackintAgent`, you must also provide input for this specification.

Required: No

- **DatabasePrimaryByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the primary SAP HANA node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **DatabaseDataFsxVolumeSize**

Type: Number

Example: 500

Description: The volume size of the SAP HANA data volume on Amazon FSx, in GBs.

Conditional: If you specify `fsx` for `DatabaseDataVolumeType`, you must also provide input for this specification.

Required: No

- **DatabaseLogFsxVolumeSize**

Type: Number

Example: 50

Description: The volume size of the SAP HANA log volume on Amazon FSx, in GBs.

Conditional: If you specify `fsx` for `DatabaseLogVolumeType`, you must also provide input for this specification.

Required: No

- **DatabaseOtherFsxVolumeSize**

Type: Number

Example: 50

Description: The volume size of the other SAP HANA volume on Amazon FSx, in GBs.

Conditional: If you specify `fsx` for `DatabaseOthersVolumeType`, you must also provide input for this specification.

Required: No

- **SnsTopicArn**

Type: String

Example: `arn:aws:sns:us-east-1:1234567890:Test-Topic`

Description: The Amazon SNS topic used to receive the final deployment status from Launch Wizard.

Required: No

- **DisableDeploymentRollback**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to disable rollback of the AWS CloudFormation stack if the stack creation fails.

Required: Yes

- **SaveDeploymentArtifacts**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to save the deployment artifacts in Service Catalog after deployment is complete.

Required: Yes

- **DeploymentArtifactsS3Uri**

Type: String

Example: s3://save-test-us-east-1

Description: The Amazon S3 URI in which to save the deployment artifacts for Service Catalog.

Required: No

## SapNWOOnHanaHA

The following are examples of the specifications required to create high-availability deployments with SAP software installed.

High availability (HA) deployment with SAP software installed:

```
{  
  "KeyName": "ExampleKeyPair",
```

```
"VpcId": "vpc-a1b2c3d4",
"AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
"AvailabilityZone2PrivateSubnet1Id": "subnet-22222222aaaaaaaa",
"Timezone" : "PST",
"EnableEbsVolumeEncryption" : "Yes",
"EbsKmsKeyArn" : "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
"CreateSecurityGroup" : "No",
"DatabaseSecurityGroupId" : "sg-1234567890abcdef0",
"ApplicationSecurityGroupId" : "sg-021345abcdef6789",
"SidAdmUserId" : "7002",
"SapSysGroupId" : "5001",
"DatabaseSystemId" : "HYD",
"SapSid" : "S4K",
"DatabaseInstanceNumber" : "30",
"InstallAwsBackintAgent" : "Yes",
"BackintSpecifications": "{ \"backintBucketName\": \"launchwizardsoftware\",
\"backintBucketFolder\": \"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-
east-1\", \"backintKmsKeyArn\": \"arn:aws:kms:us-east-1:111122223333:alias/aws/
s3\", \"backintAgentVersion\": \"2.0.2.732\", \"backintContinueOnFailure\": \"No\",
\"backintCreateEbsVolume\": \"Yes\" }",
"AscsOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"AscsAmiId" : "ami-1234567890abcdef0",
"AscsInstanceType" : "r5.2xlarge",
"AscsHostname" : "hallp123",
"AscsInstanceNumber" : "10",
"ErsOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"ErsAmiId" : "ami-1234567890abcdef0",
"ErsInstanceType" : "r5.2xlarge",
"ErsHostname" : "hallq123",
"ErsInstanceNumber" : "11",
"PasOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"PasAmiId" : "ami-1234567890abcdef0",
"PasInstanceType" : "r5.2xlarge",
"PasHostname" : "hallv123",
"InstallAas" : "Yes",
"AasHostCount" : "2",
"AasInstanceType" : "r5.2xlarge",
"AasHostnames" : "halgaa123,halhaa124",
"AasAutomaticRecovery" : "Yes",
"DatabaseOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"DatabaseAmiId" : "ami-1234567890abcdef0",
"DatabaseInstanceType" : "r5.8xlarge",
"DatabasePrimaryHostname" : "haljdbpri",
"DatabaseSecondaryHostname" : "hakldbsec",
```

```

"SapPassword" : "EXAMPLE-PASSWORD",
"InstallSap" : "Yes",
"DatabaseVirtualIpAddress" : "10.0.0.10",
"DatabasePrimarySiteName" : "dbsitfp",
"DatabaseSecondarySiteName" : "dbsitshc",
"DatabasePacemakerTag" : "hallpag",
"SetupTransportDomainController" : "No",
"SapInstallationSpecifications" : {
  "parameters" : {
    "PRODUCT_ID" : "saps4hana-2021",
    "HDB_SCHEMA_NAME" : "SAPABAP1",
    "CI_INSTANCE_NR" : "50",
    "ASCS_VIRTUAL_HOSTNAME" : "hallvirasc",
    "ERS_VIRTUAL_HOSTNAME" : "hallvirers",
    "ASCS_OVERLAY_IP" : "10.29.26.79",
    "ERS_OVERLAY_IP" : "10.96.87.80",
    "DB_VIRTUAL_HOSTNAME" : "halldbvr1",
    "SAP_PACEMAKER_TAG" : "hllpacetag",
    "SAPINST_CD_SAPCAR" : "s3://launchwizardsoftware/sapmedia/sapcar",
    "SAPINST_CD_SWPM" : "s3://launchwizardsoftware/sapmedia/swpm/20-sp10",
    "SAPINST_CD_KERNEL" : "s3://launchwizardsoftware/sapmedia/kernel/785",
    "SAPINST_CD_LOAD" : "s3://launchwizardsoftware/sapmedia/exports/s4h-2021",
    "SAPINST_CD_RDBMS" : "s3://launchwizardsoftware/sapmedia/database/hana-20-sp06-rev60",
    "SAPINST_CD_RDBMS_CLIENT" : "s3://launchwizardsoftware/sapmedia/hana-client/20-11"},
    "onFailureBehaviour" : "CONTINUE"}},
"SnsTopicArn" : "arn:aws:sns:us-east-1:111122223333:InstallStatus",
"SaveDeploymentArtifacts" : "Yes",
"DeploymentArtifactsS3Uri" : "s3://launchwizardsoftware",
"DisableDeploymentRollback" : "Yes",
"ApplicationDataVolumeType" : "gp3",
"DatabaseLogVolumeType" : "gp3",
"PasAutomaticRecovery" : "Yes"
}

```

## High-availability deployment with SAP HANA database software installed:

```

{
  "KeyPairName" : "ExampleKeyPair",
  "VpcId" : "vpc-a1b2c3d4",
  "AvailabilityZone1PrivateSubnet1Id" : "subnet-11111111aaaaaaaa",
  "AvailabilityZone2PrivateSubnet1Id" : "subnet-22222222aaaaaaaa",
  "Timezone" : "PST",
  "EnableEbsVolumeEncryption" : "Yes",
  "EbsKmsKeyArn" : "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
  "CreateSecurityGroup" : "No",
  "DatabaseSecurityGroupId" : "sg-1234567890abcdef0",
  "ApplicationSecurityGroupId" : "sg-021345abcdef6789",
  "SidAdmUserId" : "7002",
  "SapSysGroupId" : "5001",

```

```
"DatabaseSystemId" : "HYD",
"SapSid" : "S4K",
"DatabaseInstanceNumber" : "30",
"AscsOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"AscsAmiId" : "ami-1234567890abcdef0",
"AscsInstanceType" : "r5.2xlarge",
"AscsHostname" : "hallaq123",
"AscsInstanceNumber" : "10",
"ErsOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"ErsAmiId" : "ami-1234567890abcdef0",
"ErsInstanceType" : "r5.2xlarge",
"ErsHostname" : "halles123",
"ErsInstanceNumber" : "11",
"PasOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"PasAmiId" : "ami-1234567890abcdef0",
"PasInstanceType" : "r5.2xlarge",
"PasHostname" : "hallxp123",
"InstallAas" : "Yes",
"AasHostCount" : "2",
"AasInstanceType" : "r5.2xlarge",
"AasHostnames" : "hallx123,hally124",
"AasAutomaticRecovery" : "Yes",
"DatabaseOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"DatabaseAmiId" : "ami-1234567890abcdef0",
"DatabaseInstanceType" : "r5.8xlarge",
"DatabasePrimaryHostname" : "halsdpri",
"DatabaseSecondaryHostname" : "halsdsec",
"SapPassword" : "EXAMPLE-PASSWORD",
"DatabaseVirtualIpAddress" : "10.0.0.10",
"DatabasePrimarySiteName" : "dbsitep",
"DatabaseSecondarySiteName" : "dbsitsec",
"DatabasePacemakerTag" : "hallfetag",
"InstallSap" : "No",
"InstallDatabaseSoftware" : "Yes",
"DatabaseInstallationMediaS3Uri" : "s3://launchwizardsoftware/sapmedia/database/
hana-20-sp06-rev60",
"InstallAwsBackintAgent" : "Yes",
"BackintSpecifications": "{\"backintBucketName\": \"launchwizardsoftware\",
\"backintBucketFolder\": \"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-
east-1\", \"backintKmsKeyArn\": \"arn:aws:kms:us-east-1:111122223333:alias/aws/
s3\", \"backintAgentVersion\": \"2.0.2.732\", \"backintContinueOnFailure\": \"No\",
\"backintCreateEbsVolume\": \"Yes\"}",
"SetupTransportDomainController" : "No",
"SnsTopicArn" : "arn:aws:sns:us-east-1:111122223333:InstallStatus",
```

```
"SaveDeploymentArtifacts" : "Yes",
"DeploymentArtifactsS3Uri" : "s3://launchwizardsoftware",
"DisableDeploymentRollback" : "Yes",
"ApplicationDataVolumeType": "gp3",
"DatabaseLogVolumeType": "gp3",
"PasAutomaticRecovery": "Yes"
}
```

## High-availability deployment with only infrastructure resources:

```
{
  "KeyPairName": "ExampleKeyPair",
  "VpcId": "vpc-a1b2c3d4",
  "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
  "AvailabilityZone2PrivateSubnet1Id": "subnet-22222222aaaaaaaa",
  "Timezone" : "PST",
  "EnableEbsVolumeEncryption" : "Yes",
  "EbsKmsKeyArn" : "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
  "CreateSecurityGroup" : "No",
  "DatabaseSecurityGroupId" : "sg-1234567890abcdef0",
  "ApplicationSecurityGroupId" : "sg-021345abcdef6789",
  "SidAdmUserId" : "7002",
  "SapSysGroupId" : "5001",
  "DatabaseSystemId" : "HYD",
  "SapSid" : "S4K",
  "DatabaseInstanceNumber" : "30",
  "AscsOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
  "AscsAmiId" : "ami-1234567890abcdef0",
  "AscsInstanceType" : "r5.2xlarge",
  "AscsHostname" : "hallaq123",
  "AscsInstanceNumber" : "10",
  "ErsOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
  "ErsAmiId" : "ami-1234567890abcdef0",
  "ErsInstanceType" : "r5.2xlarge",
  "ErsHostname" : "halles13",
  "ErsInstanceNumber" : "11",
  "PasOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
  "PasAmiId" : "ami-1234567890abcdef0",
  "PasInstanceType" : "r5.2xlarge",
  "PasHostname" : "hallxp13",
  "InstallAas" : "Yes",
  "AasHostCount" : "2",
  "AasInstanceType" : "r5.2xlarge",
}
```



```

"AasHostnames" : "hallx13,hally14",
"AasAutomaticRecovery" : "Yes",
"DatabaseOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"DatabaseAmiId" : "ami-1234567890abcdef0",
"DatabaseInstanceType" : "r5.8xlarge",
"DatabasePrimaryHostname" : "halldpri1",
"DatabaseSecondaryHostname" : "halldsec1",
"SapPassword" : "EXAMPLE-PASSWORD",
"DatabaseVirtualIpAddress" : "10.0.0.10",
"DatabasePrimarySiteName" : "dbsitep7",
"DatabaseSecondarySiteName" : "dbsitsec7",
"DatabasePacemakerTag" : "hallcetag7",
"InstallSap" : "No",
"InstallDatabaseSoftware" : "No",
"InstallAwsBackintAgent" : "No",
"SetupTransportDomainController" : "No",
"SnsTopicArn" : "arn:aws:sns:us-east-1:111122223333:InstallStatus",
"SaveDeploymentArtifacts" : "Yes",
"DeploymentArtifactsS3Uri" : "s3://launchwizardsoftware",
"DisableDeploymentRollback" : "Yes",
"ApplicationDataVolumeType": "gp3",
"DatabaseLogVolumeType": "gp3",
"PasAutomaticRecovery": "Yes"
}

```

High availability (HA) deployment with SAP Web Dispatcher, a Network Load Balancer with a secure protocol enabled, and SAP software installed:

```

{
  "AasAutomaticRecovery": "Yes",
  "AasHostCount": "1",
  "AasHostnames": "sapaas",
  "AasInstanceType": "r5.4xlarge",
  "ApplicationDataVolumeType": "gp3",
  "applicationName": "ExampleApp",
  "ApplicationSecurityGroupId": "sg-1234567890abcdef0",
  "AscsAmiId": "ami-1234567890abcdef0",
  "AscsHostname": "sapascs",
  "AscsInstanceNumber": "10",
  "AscsInstanceType": "r5.4xlarge",
  "AscsOperatingSystem": "SuSE-Linux-15-SP4-For-SAP-HVM",
  "AscsVirtualHostname": "sapvirtascs",
  "AscsVirtualIPAddress": "10.0.0.8",

```

```
"AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
"AvailabilityZone2PrivateSubnet1Id": "subnet-22222222aaaaaaaa",
"BackintSpecifications": "{\"backintBucketName\":\"launchwizard-hana-backups-pdx\",
\"backintBucketFolder\":\"\", \"backintBucketRegion\":\"us-west-2\", \"backintKmsKeyArn
\": \"arn:aws:kms:us-west-2:111122223333:alias/aws/s3\", \"backintAgentVersion\":
\"2.0.4.797\", \"backintContinueOnFailure\":\"No\", \"backintCreateEbsVolume\":\"No\"}",
"CreateSecurityGroup": "No",
"DatabaseAmiId": "ami-1234567890abcdef0",
"DatabaseDataVolumeType": "gp3",
"DatabaseInstanceNumber": "30",
"DatabaseInstanceType": "r5.4xlarge",
"DatabaseLogVolumeType": "gp3",
"DatabaseOperatingSystem": "SuSE-Linux-15-SP4-For-SAP-HVM",
"DatabasePacemakerTag": "sappacetag",
"DatabasePrimaryHostname": "sapdbpri",
"DatabasePrimarySiteName": "saprisite",
"DatabaseSecondaryHostname": "sapsecdb",
"DatabaseSecondarySiteName": "sapsecsite",
"DatabaseSecurityGroupId": "sg-1234567890abcdef0",
"DatabaseSystemId": "HDB",
"DatabaseVirtualIpAddress": "10.0.0.7",
"DisableDeploymentRollback": "Yes",
"EnableEbsVolumeEncryption": "No",
"ErsAmiId": "ami-1234567890abcdef0",
"ErsHostname": "sapers",
"ErsInstanceNumber": "11",
"ErsInstanceType": "r5.4xlarge",
"ErsOperatingSystem": "SuSE-Linux-15-SP4-For-SAP-HVM",
"ErsVirtualHostname": "sapvirters",
"ErsVirtualIPAddress": "10.0.0.9",
"InstallAas": "Yes",
"InstallAwsBackintAgent": "Yes",
"InstallDatabaseSoftware": "Yes",
"InstallSap": "Yes",
"InstallSapWebDispatcher": "Yes",
"InstallWebDispatcherLoadBalancer": "Yes",
"KeyPairName": "ExampleKeyPair",
"PasAmiId": "ami-1234567890abcdef0",
"PasAutomaticRecovery": "Yes",
"PasHostname": "sappas",
"PasInstanceType": "r5.4xlarge",
"PasOperatingSystem": "SuSE-Linux-15-SP4-For-SAP-HVM",
"SapInstallationSpecifications": "{\"parameters\":{\"PRODUCT_ID\":
\"sapNetweaver-752\", \"CI_INSTANCE_NR\": \"12\", \"ASCS_INSTANCE_NR\": \"10\",
```

```

\ "WD_INSTANCE_NR\ ": \"14\", \"ASCS_VIRTUAL_HOSTNAME\ ": \"sapvirascs\", \"ASCS_OVERLAY_IP
\ ": \"10.0.0.8\", \"ERS_VIRTUAL_HOSTNAME\ ": \"sapvirers\", \"ERS_OVERLAY_IP\ ":
\ \"10.0.0.9\", \"DB_VIRTUAL_HOSTNAME\ ": \"sapviradb\", \"SAP_PACEMAKER_TAG\ ": \"sappacetag
\ \", \"SAPINST_CD_SAPCAR\ ": \"s3://launchwizard-example/sapcar/\", \"SAPINST_CD_SWPM
\ ": \"s3://launchwizard-example/swpm/10-sp39/\", \"SAPINST_CD_KERNEL\ ": \"s3://
launchwizard-example/kernel/\", \"SAPINST_CD_LOAD\ ": \"s3://launchwizard-example/exports/
nw-752/\", \"SAPINST_CD_RDBMS\ ": \"s3://launchwizard-example/database/hana-20-sp07/
\ \", \"SAPINST_CD_RDBMS_CLIENT\ ": \"s3://launchwizard-example/hana-client/20-11/\",
\ \"SAPINST_CD_WD\ ": \"s3://launchwizard-example-us-east-1/webdisp/\"}},
  \"SapPassword\": \"EXAMPLE-PASSWORD\",
  \"SapSid\": \"SSD\",
  \"SapSysGroupId\": \"5001\",
  \"SaveDeploymentArtifacts\": \"No\",
  \"SetupTransportDomainController\": \"No\",
  \"SidAdmUserId\": \"7002\",
  \"Timezone\": \"UTC\",
  \"VpcId\": \"vpc-a1b2c3d4\",
  \"WebDispatcherAdminUserId\": \"5100\",
  \"WebDispatcherAmiId\": \"ami-1234567890abcdef0\",
  \"WebDispatcherAutoRecovery\": \"Yes\",
  \"WebDispatcherAvailabilityZone1PrivateSubnetId\": \"subnet-11111111aaaaaaaa\",
  \"WebDispatcherAvailabilityZone2PrivateSubnetId\": \"subnet-22222222aaaaaaaa\",
  \"WebDispatcherInstanceNumber\": \"14\",
  \"WebDispatcherInstanceType\": \"r5.4xlarge\",
  \"WebDispatcherLoadBalancerACMCertificateArn\":
\"arn:aws:acm:region:account:certificate/certificate_ID\",
  \"WebDispatcherLoadBalancerAvailabilityZone1SubnetId\": \"subnet-11111111aaaaaaaa\",
  \"WebDispatcherLoadBalancerAvailabilityZone2SubnetId\": \"subnet-22222222aaaaaaaa\",
  \"WebDispatcherLoadBalancerInternetFacing\": \"No\",
  \"WebDispatcherLoadBalancerSecureProtocolEnabled\": \"Yes\",
  \"WebDispatcherLoadBalancerSecurityGroupId\": \"sg-1234567890abcdef0\",
  \"WebDispatcherLoadBalancerType\": \"NLB\",
  \"WebDispatcherOperatingSystem\": \"SuSE-Linux-15-SP4-For-SAP-HVM\",
  \"WebDispatcherSecondaryServerHostname\": \"sapsecwd\",
  \"WebDispatcherSecurityGroupId\": \"sg-1234567890abcdef0\",
  \"WebDispatcherServerHostname\": \"sapwd\",
  \"WebDispatcherSystemId\": \"WDD\",
  \"WebDispatcherVersion\": \"7.93\"
}

```

The following list describes each specification input:

- **KeyPairName**

Type: String

Constraints: Up to 255 ASCII characters

Example: home

Description: The name of an existing Amazon EC2 key pair. All instances will launch with this key pair.

Required: Yes

- **VpcId**

Type: String

Example: vpc-01234567890

Description: The existing Amazon VPC where you want to deploy the system.

Required: Yes

- **AvailabilityZone1PrivateSubnet1Id**

Type: String

Example: subnet-11111111aaaaaaaa

Description: The existing private subnet where you want to deploy the system.

Required: Yes

- **AvailabilityZone1PrivateSubnet2Id**

Type: String

Example: subnet-11111111bbbbbbbb

Description: The existing private subnet where you want to deploy the system.

Required: No

- **AvailabilityZone2PrivateSubnet1Id**

Type: String

Example: subnet-22222222aaaaaaaa

Description: The additional private subnet that uses a different Availability Zone where you want to deploy the system.

Required: Yes

- **AvailabilityZone2PrivateSubnet2Id**

Type: String

Example: subnet-22222222bbbbbbbb

Description: The additional private subnet that uses a different Availability Zone where you want to deploy the system.

Required: No

- **ProxyServerAddress**

Type: String

Example: http://10.x.x.x:8080

Description: The ProxyServerAddress address for http access. For example, *http://xyz.abc.com:8080* or *http://10.x.x.x:8080*.

Required: No

- **NoProxy**

Type: String

Example: http://10.x.x.x:8080

Description: A comma separated list of URLs, CIDR ranges, or IP addresses for which to disable ProxyServerAddress settings using the NO\_ProxyServerAddress environment variable. You can specify input for this specification when input has been provided for ProxyServerAddress. Any values you specify are appended to the default configuration for the NO\_ProxyServerAddress environment variable. The following entries are used by default:

```
NO_ProxyServerAddress="localhost,127.0.0.1,169.254.169.254,.internal,  
{VPC_CIDR_RANGE}"
```

Required: No

- **Timezone**

Type: String

Example: UTC

Description: The time zone to configure for your SAP resources.

Required: Yes

- **EnableEbsVolumeEncryption**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to encrypt the EBS volumes used for the deployment.

Required: Yes

- **EbsKmsKeyArn**

Type: String

Example: arn:aws:kms:us-west-2:111122223333:key/1234abcd-12ab-34cd-56ef-1234567890ab

Description: Specifies a KMS key ARN for encrypting EBS volumes when `EnableEbsVolumeEncryption` is set to Yes.

Conditional: If `EnableEbsVolumeEncryption` is Yes, you must specify a KMS key ARN.

Required: No

- **CreateSecurityGroup**

Type: String

AllowedValues: Yes | No

Description: Specifies whether you want to create new security groups for the deployment.

Required: Yes

- **NewSecurityGroupRules**

Type: String

Example: "[{\\"type\\":\\"ip\\",\\"value\\":\\"10.0.0.0/32\\"},{\\"type\\":\\"securityGroupId\\",\\"value\\":\\"sg-0e1c107d640209244\\"}]"

Description: A list of CIDR blocks or Security Group IDs to be used for creating a new security group.

Conditional: If you specify Yes for CreateSecurityGroup, you must also provide input for this configuration.

Required: No

- **NewDatabaseSecurityGroupName**

Type: String

Example: dbsgname

Description: The name of the database tier security group.

Conditional: If you specify Yes for CreateSecurityGroup, you must also provide input for this configuration.

Required: No

- **NewApplicationSecurityGroupName**

Type: String

Example: dbsgname

Description: The name of the application tier security group.

Conditional: If you specify Yes for CreateSecurityGroup, you must also provide input for this configuration.

Required: No

- **DatabaseSecurityGroupId**

Example: sg-1234567890abcdef

Description: The security group ID for your HANA database.

Conditional: If you specify No for `CreateSecurityGroup`, you must provide an input for this configuration.

Required: No

- **ApplicationSecurityGroupId**

Type: String

Example: sg-1234567890ghijkl

Description: The security group ID for your SAP application.

Conditional: If you specify No for `CreateSecurityGroup`, you must provide an input for this configuration.

Required: No

- **DomainName**

Type: String

Example: example.com

Description: The domain name to be used for the deployment.

Required: No

- **HostedZoneName**

Type: String

Example: example.com

Description: The Amazon Route 53 hosted zone name.

Required: No

- **HostedZoneId**

Type: String



Example: Z36KTIQEXAMPLE

Description: Route 53 hosted zone id.

Conditional: If you specify a value for HostedZoneName, you must also provide input for this specification.

Required: No

- **DedicatedHostId**

Type: CommaDelimitedList String

Example: h-012a3456b7890cdef

Description: The existing Dedicated Hosts on which you want to launch your instances.

Conditional: If you are using Amazon EC2 High Memory Instances, you must provide an input for this specification. For more information on Amazon EC2 High Memory Instances, see [Amazon EC2 High Memory Instances](#).

Required: No

- **ConfigurationScripts**

Type: String

Example: {"preConfigurationScripts": {"onFailureBehaviour": "*CONTINUE*", "configurationScripts": [{"nodeTypesToRunScriptFor": ["*DB*"], "s3URL": "*s3://launchwizard-scripts-preconfig-us-west-2/preconfig-install.sh*", "sequence": "*0*"}]}, "postConfigurationScripts": {"onFailureBehaviour": "*CONTINUE*", "configurationScripts": [{"nodeTypesToRunScriptFor": ["*DB*"], "s3URL": "*s3://launchwizard-scripts-postconfig-us-west-2/postconfig-install.sh*", "sequence": "*0*"}]}}

Description: A list of pre- and post-configuration deployment scripts formatted as stringified JSON. You can specify one or more pre- or post-configuration scripts separately, or together. You must provide the follow details for each script:

- The URL for the script that has been uploaded to Amazon S3.
- A sequence number which specifies the order of execution.

- The type of node to run the script on. You can specify DB, AAS, ACSC, ERS, and PAS.
- The behavior to use should a failure or timeout occur when running the script. You can specify CONTINUE to proceed with the deployment or ROLLBACK to cancel the deployment.

Required: No

- **SidAdmUserId**

Type: String

Example: 1002

Description: The UID for the <sid>adm user. The default UID is 1002.

Required: Yes

- **SapSysGroupId**

Type: String

Example: 1001

Description: GID for the sapsys group. The default GID is 1001.

Required: Yes

- **DatabaseSystemId**

Type: String

Constraints: This value must consist of 3 characters.

Example: HDB

Description: The SAP HANA system ID for installation and setup.

Required: Yes

- **SapSid**

Type: String

Constraints: This value must consist of 3 characters.

Example: HDB

Description: The SAP application system ID for installation and setup.

Required: Yes

- **ApplicationDataVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2

Description: The Amazon EBS volume type for the SAP application.

Required: Yes

- **DatabaseInstanceNumber**

Type: String

Constraints: The instance number must be between 00 and 97.

Example: 00

Description: The SAP HANA instance number to use for installation, setup, and to open ports for security groups.

Required: Yes

- **InstallAwsBackintAgent**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install the AWS Backint Agent for SAP HANA.

Conditional: This specification can only be used in this deployment pattern if `InstallSap` is specified as `Yes`, or `InstallSap` is specified as `No` and `InstallDatabaseSoftware` is set to `Yes`.

Required: Yes

- **BackintSpecifications**

Type: String

**Example:**

```
{\"backintBucketName\": \"ExampleBucket\", \"backintBucketFolder\":  
\"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-east-1\", \"backintKmsKeyArn  
\": \"arn:aws:kms:us-east-1:111122223333:alias/aws/s3\", \"backintAgentVersion\":  
\"2.0.2.732\", \"backintContinueOnFailure\": \"No\", \"backintCreateEbsVolume\": \"No\"}
```

Description: Parameters for the AWS Backint Agent for SAP HANA formatted as stringified JSON.

Conditional: If you specify Yes for `InstallAwsBackintAgent`, you must also provide input for this specification.

Required: No

- **AscsOperatingSystem**

Type: String

Example: SuSE-Linux-12-SP5-For-SAP-HVM

Description: The operating system (including the version) for the ASCS node.

Required: Yes

- **AscsAmild**

Type: String

Example: ami-22222222222222

Description: The AMI ID to use for the ASCS node. The AMI can be provided by Amazon, sourced from AWS Marketplace, or with Bring your own images (BYOI). If the AMI from AWS Marketplace is using the Bring Your Own Subscription model (BYOS), you must provide the registration code for SUSE distributions or an account and password for RHEL distributions.

Required: Yes

- **AscsByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the ASCS node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **AscsSlesByosRegistrationCode**

Type: String

Description: The SLES registration code for Bring Your Own Subscription model (BYOS) images.

Conditional: If you specify SUSE as the operating system, and it uses BYOS, you must also provide input for this specification.

Required: No

- **AscsRhelByosUsername**

Type: String

Example: admin

Description: The username in the Red Hat Enterprise Linux (RHEL) operating system to use.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **AscsRhelByosUserPassword**

Type: String

Description: The password for the user specified in `AscsRhelByosUsername`.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **AscsInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for the ASCS node.

Required: Yes

- **AscsHostname**

Type: String

Example: ASCSPRIMARY

Description: The host name or DNS short name to use for the ASCS node.

Required: Yes

- **AscsInstanceNumber**

Type: String

Constraints: The instance number must be between 00 and 97.

Example: 10

Description: The ASCS instance number.

Required: Yes

- **ErsOperatingSystem**

Type: String

Example: SuSE-Linux-12-SP5-For-SAP-HVM

Description: The operating system (including the version) for the ErsOperatingSystem node.

Required: Yes

- **ErsAmiId**

Type: String

Example: ami-3333333333333333

Description: The AMI ID to use for the ERSA node. The AMI can be provided by Amazon, sourced from AWS Marketplace, or with Bring your own images (BYOI). If the AMI from AWS Marketplace is using the Bring Your Own Subscription model (BYOS), you must provide the registration code for SUSE distributions or an account and password for RHEL distributions.

Required: Yes

- **ErsByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the ERS node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **ErsSlesByosRegistrationCode**

Type: String

Description: The SLES registration code for Bring Your Own Subscription model (BYOS) images.

Conditional: If you specify SUSE as the operating system, and it uses BYOS, you must also provide input for this specification.

Required: No

- **ErsRhelByosUsername**

Type: String

Example: admin

Description: The username in the Red Hat Enterprise Linux (RHEL) operating system to use.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **ErsRhelByosUserPassword**

Type: String

Description: The password for the user specified in ErsRhelByosUsername.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **ErsInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for the ERS node.

Required: Yes

- **ErsHostname**

Type: String

Example: ERSPrimary

Description: The host name or DNS short name to use for the ERS node.

Required: Yes

- **ErsInstanceNumber**

Type: String

Constraints: The instance number must be between 00 and 97.

Example: 10

Description: The ERS instance number.

Required: Yes

- **PasOperatingSystem**

Type: String

Example: SuSE-Linux-12-SP5-For-SAP-HVM

Description: The operating system (including the version) for the PAS node.

Required: Yes

- **PasAmild**

Type: String



Example: ami-3333333333333333

Description: The AMI ID to use for the PAS node. The AMI can be provided by Amazon, sourced from AWS Marketplace, or with Bring your own images (BYOI). If the AMI from AWS Marketplace is using the Bring Your Own Subscription model (BYOS), you must provide the registration code for SUSE distributions or an account and password for RHEL distributions.

Required: Yes

- **PasByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the PAS node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **PasSlesByosRegistrationCode**

Type: String

Description: The SLES registration code for Bring Your Own Subscription model (BYOS) images.

Conditional: If you specify SUSE as the operating system, and it uses BYOS, you must also provide input for this specification.

Required: No

- **PasRhelByosUsername**

Type: String

Example: admin

Description: The username in the Red Hat Enterprise Linux (RHEL) operating system to use.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **PasRhelByosUserPassword**

Type: String

Description: The password for the user specified in PasRhelByosUsername.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **PasAutomaticRecovery**

Type: String

AllowedValues: Yes | No

Description: Specify Yes to enable Amazon CloudWatch action based recovery for the PAS node or No to keep it disabled. For HA deployments, set this value to No as the cluster will manage availability for the nodes.

Required: Yes

- **PasInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for the PAS node.

Required: Yes

- **PasHostname**

Type: String

Example: PASPrimary

Description: The host name or DNS short name to use for the PAS node.

Required: Yes

- **InstallAas**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install AAS instances.

Required: Yes

- **AasHostCount**

Type: Number

Min: 0

Max: 10

Description: The number of AAS instances to deploy.

Conditional: If you specify `true` for `InstallAas`, you must provide a value for this specification.

Required: Yes

- **AasByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the AAS node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Conditional: You must specify `true` for `InstallAas` to provide a value for this specification.

Required: No

- **AasAutomaticRecovery**

Type: String

AllowedValues: Yes | No

Description: Specify `Yes` to enable Amazon CloudWatch action based recovery for the PAS node or `No` to keep it disabled. For HA deployments, set this value to `No` as the cluster will manage availability for the nodes.

Conditional: If you specify `true` for `InstallAas`, you must provide a value for this specification.

Required: Yes

- **AasInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for the AAS node.

Conditional: If you specify `true` for `InstallAas`, you must provide a value for this specification.

Required: Yes

- **AasHostnames**

Type: String

Example: AASPrimary

Description: The host name or DNS short name to use for the AAS node.

Conditional: If you specify `true` for `InstallAas`, you must provide a value for this specification.

Required: Yes

- **DatabaseOperatingSystem**

Type: String

Example: SuSE-Linux-12-SP5-For-SAP-HVM

Description: The operating system (including the version) for SAP HANA.

AllowedValues: SuSE-Linux-12-SP4-HVM | SuSE-Linux-12-SP4-For-SAP-HVM | SuSE-Linux-12-SP5-HVM | SuSE-Linux-12-SP5-For-SAP-HVM | SuSE-Linux-15-HVM | SuSE-Linux-15-For-SAP-HVM | SuSE-Linux-15-SP1-HVM | SuSE-Linux-15-SP1-For-SAP-HVM | SuSE-Linux-15-SP2-HVM | SuSE-Linux-15-SP2-For-SAP-HVM | SuSE-Linux-15-SP3-HVM | SuSE-Linux-15-SP3-For-SAP-HVM | SuSE-Linux-15-SP4-HVM | SuSE-Linux-15-SP4-For-SAP-HVM | Red-Hat-Enterprise-Linux-7.6-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.7-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.9-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.1-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.2-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.4-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.6-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.6-

BYOS | Red-Hat-Enterprise-Linux-7.7-BYOS | Red-Hat-Enterprise-Linux-8.1-BYOS | Red-Hat-Enterprise-Linux-8.2-BYOS | Red-Hat-Enterprise-Linux-8.4-BYOS | Red-Hat-Enterprise-Linux-8.6-BYOS | SuSE-Linux-12-SP4-For-SAP-BYOS-HVM | SuSE-Linux-12-SP5-For-SAP-BYOS-HVM | SuSE-Linux-15-For-SAP-BYOS-HVM | SuSE-Linux-15-SP1-For-SAP-BYOS-HVM | SuSE-Linux-15-SP2-For-SAP-BYOS-HVM | SuSE-Linux-15-SP3-For-SAP-BYOS-HVM | SuSE-Linux-15-SP4-For-SAP-BYOS-HVM

Required: Yes

- **DatabaseAmild**

Type: String

Example: ami-1111111111111111

Description: The AMI ID to use for the SAP HANA nodes. The AMI can be provided by Amazon, sourced from AWS Marketplace, or with Bring your own images (BYOI). If the AMI from AWS Marketplace is using the Bring Your Own Subscription model (BYOS), you must provide the registration code for SUSE distributions or an account and password for RHEL distributions.

Required: Yes

- **DatabasePrimaryByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the primary SAP HANA node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **DatabaseStandbyByoips**

Type: String

Example: 10.0.1.11

Description: A private IPv4 address to be used by the standby SAP HANA node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **DatabaseInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for SAP HANA nodes.

Required: Yes

- **DatabasePrimaryHostname**

Type: String

Example: HanaPrimary

Description: The host name or DNS short name to use for the primary SAP HANA node.

Required: Yes

- **DatabaseSecondaryHostName**

Type: String

Example: SecondaryHostName

Description: The host name or DNS short name to use for the secondary node.

Required: Yes

- **DatabaseSlesByosRegistrationCode**

Type: String

Description: The SLES registration code for Bring Your Own Subscription model (BYOS) images.

Conditional: If you specify SUSE as the operating system, and it uses BYOS, you must also provide input for this specification.

Required: No

- **DatabaseRhelByosUserName**

Type: String

Example: admin

Description: The username in the Red Hat Enterprise Linux (RHEL) operating system to use.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **DatabaseRhelByosUserPassword**

Type: String

Description: The password for the user specified in DatabaseRhelByosUserName.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **DatabaseRhelByosUserPassword**

Type: String

Description: The password for the user specified in DatabaseRhelByosUserName.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **SapPassword**

Type: String

Description: Specifies the password to use for setting up the SAP application and database defaults users. The password must:

- Be between 10 and 13 alphanumeric characters.
- Not begin with a number or special character.
- Have at least one uppercase letter.
- Have at least one lowercase letter.
- Have at least one digit.
- Only use the following special characters: #, @, and \_.

Required: Yes

- **DatabaseLogVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2 | fsx

Description: The Amazon EBS volume type, or FSx for ONTAP (if supported) file share, for database logging.

Conditional: If fsx is specified for DatabaseLogVolumeType, you must also specify fsx for DatabaseDataVolumeType.

Required: Yes

- **DatabaseOthersVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2

Default: gp3

Description: The Amazon EBS volume type for other file systems, including the root volume.

Conditional: If fsx is specified for DatabaseDataVolumeType and DatabaseLogVolumeType, you must provide input for this specification.

Required: No

- **InstallDatabaseSoftware**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP HANA software.

Required: Yes

- **DatabaseInstallationMediaS3Uri**

Type: String



Example: s3://myhanabucket/sap-hana-sps11/

Description: The full path to the Amazon S3 location with SAP HANA installation media.

Required: No

- **DatabaseVirtualIpAddress**

Type: String

Example: 192.168.1.99

Description: The overlay IP address to assign to the active node. The overlay IP is configured to always point to the primary SAP HANA node. The address should be from one of the following CIDR blocks: 10.0.0.0/8, 172.16.0.0/12, 192.168.0.0/16, or 100.64.0.0/10. The IP address should also be outside of the VPC CIDR block and must not be used by any other HA cluster.

Required: Yes

- **DatabasePrimarySiteName**

Type: String

Example: HAP

Description: The primary HANA site name for SAP HANA System Replication (HSR).

Required: Yes

- **DatabaseSecondarySiteName**

Type: String

Example: HAS

Description: The secondary HANA site name for SAP HANA System Replication (HSR).

Required: Yes

- **DatabasePacemakerTag**

Type: String

**Example: PaceTag**

Description: Pacemaker tag name. This value should not be used by any other instances in your AWS account.

Required: Yes

- **SetupTransportDomainController**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to use transport FS.

Required: Yes

- **CreateTransportDomainControllerFileSystem**

Type: String

AllowedValues: Yes | No

Default: No

Description: Specifies whether to create a new Amazon EFS for the transport domain controller.

Conditional: You must specify No for SetupTransportDomainController to provide value for this specification.

Required: No

- **TransportDomainControllerFileSystemId**

Type: String

Example: fs-1234567890abcdef0

Description: The ID of an existing Elastic File System for the transport domain controller.

Conditional: If you specify No for CreateTransportDomainControllerFileSystem, you must also provide input for this specification.

Required: Yes

## • InstallSap

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP. The following specification combinations can be used to customize your application:

- To install SAP application software, specify No for InstallDatabaseSoftware and Yes for InstallSap.
- To install only the database software and deploy infrastructure resources for the application and database components, specify Yes for InstallDatabaseSoftware and No for InstallSap.
- To only deploy infrastructure resources for the SAP application and database components, specify No for InstallDatabaseSoftware and InstallSap.

Required: Yes

## • SapInstallationSpecifications

Type: String

Example without SAP Web Dispatcher: {"parameters":

```
{ "PRODUCT_ID": "saps4hana-2022", "HDB_SCHEMA_NAME": "SAPABAP1", "CI_INSTANCE_NR": "12", "SAPINST_CD_SWPM": "s3://launchwizard-test-sap-media/sapcar", "SAPINST_CD_KERNEL": "s3://launchwizard-test-sap-media/kernel", "SAPINST_CD_LOAD": "s3://launchwizard-test-sap-media/exports/nw-75", "SAPINST_CD_RDBMS": "s3://launchwizard-test-sap-media/database", "SAPINST_CD_RDBMS_CLIENT": "s3://launchwizard-test-sap-media/hana-client"}, "onFailureBehaviour": "CONTINUE/ROLLBACK"}
```

Example with SAP Web Dispatcher: {"parameters":

```
{ "PRODUCT_ID": "sapNetweaver-752", "CI_INSTANCE_NR": "12", "ASCS_INSTANCE_NR": "10", "WD_INSTANCE_NR": "1", "SAPINST_CD_SWPM": "s3://launchwizard-example/sapcar/", "SAPINST_CD_KERNEL": "s3://launchwizard-example/kernel/", "SAPINST_CD_LOAD": "s3://launchwizard-example/exports/nw-752/", "SAPINST_CD_RDBMS": "s3://launchwizard-example/database/hana-20-sp07/", "SAPINST_CD_RDBMS_CLIENT": "s3://launchwizard-example/hana-client/20-11/", "SAPINST_CD_WD": "s3://launchwizard-example-us-east-1/webdisp/"}
```

Description: A list of SAP Application installation parameters formatted as stringified JSON. You can specify any of the following values for the PRODUCT\_ID: sapNetWeaver-752 | sapNetWeaver-750 | sapNetweaverJavaOnly-750 | saps4hana-1909 | saps4hana-2020 | saps4hana-2021 | saps4hana-2022 | saps4hana-2023 | saps4hanafoundations-2021 | saps4hanafoundations-2022 | saps4hanafoundations-2023 | sapbw4hana-2.0 | sapbw4hana-2021 | sapsolman-7.2

Conditional: If you specify Yes for InstallSap, you must also provide input for this specification.

Required: No

- **DatabaseDataFsxVolumeSize**

Type: Number

Example: 500

Description: The volume size of the SAP HANA data volume on Amazon FSx, in GBs.

Conditional: If you specify fsx for DatabaseDataVolumeType, you must also provide input for this specification.

Required: No

- **DatabaseLogFsxVolumeSize**

Type: Number

Example: 50

Description: The volume size of the SAP HANA log volume on Amazon FSx, in GBs.

Conditional: If you specify fsx for DatabaseLogVolumeType, you must also provide input for this specification.

Required: No

- **DatabaseOtherFsxVolumeSize**

Type: Number

Example: 50

Description: The volume size of the other SAP HANA volume on Amazon FSx, in GBs.

Conditional: If you specify `fsx` for `DatabaseOthersVolumeType`, you must also provide input for this specification.

Required: No

- **SnsTopicArn**

Type: String

Example: `arn:aws:sns:us-east-1:1234567890:Test-Topic`

Description: The Amazon SNS topic used to receive the final deployment status from Launch Wizard.

Required: No

- **DisableDeploymentRollback**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to disable rollback of the AWS CloudFormation stack if the stack creation fails.

Required: Yes

- **SaveDeploymentArtifacts**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to save the deployment artifacts in Service Catalog after deployment is complete.

Required: Yes

- **DeploymentArtifactsS3Uri**

Type: String

Example: s3://save-test-us-east-1

Description: The Amazon S3 URI in which to save the deployment artifacts for Service Catalog.

Required: No

- **InstallSapWebDispatcher**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP Web Dispatcher.

Required: No

- **InstallWebDispatcherLoadBalancer**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to deploy a load balancer in front of SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `InstallSap` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerType**

Type: String

AllowedValues: ALB | NLB

Description: Specifies the kind of load balancer to deploy in front of SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerInternetFacing**

Type: String

AllowedValues: Yes | No

Description: Specifies whether the load balancer in front of SAP Web Dispatcher is internet-facing.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherInstanceNumber**

Type: Number

Min: 00

Max: 97

Description: The double-digit instance number for the SAP Web Dispatcher instance.

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `InstallSap` are specified as Yes.

Required: Yes

- **WebDispatcherAdminUserId**

Type: Number

Min: 100

Max: 65536

Description: The user ID number for the SAP Web Dispatcher administrator.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherSystemId**

Type: String

Description: This value must consist of 3 uppercase characters.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherVersion**

Type: String

AllowedValues: 7.89

Description: The SAP Web Dispatcher version to use. For more information, see [Supported versions of SAP Web Dispatcher](#).

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `InstallSap` are specified as Yes.

Required: Yes

- **WebDispatcherOperatingSystem**

Type: String

AllowedValues: Yes | No

Description: The operating system to use for SAP Web Dispatcher nodes. For more information, see [Operating systems](#).

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherAmild**

Type: String

Example: ami-4444444444444444



Description: The AMI ID to use for SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type to use for SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherAutoRecovery**

Type: String

AllowedValues: Yes | No

Description: .

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes. Specify Yes to enable Amazon CloudWatch action based recovery for the SAP Web Dispatcher nodes or No to keep it disabled.

Required: Yes

- **WebDispatcherAvailabilityZone1PrivateSubnetId**

Type: String

Example: subnet-11111111aaaaaaaa

Description: The existing private subnet where you want to deploy SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallWebDispatcherLoadBalancer` is specified as Yes.

Required: Yes

- **WebDispatcherAvailabilityZone2PrivateSubnetId**

Type: String

Example: subnet-22222222aaaaaaaa

Description: The additional existing private subnet where you want to deploy SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherServerHostname**

Type: String

Example: sapwdprimary

Description: The host name or DNS short name to use for the SAP Web Dispatcher node.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherSecondaryServerHostname**

Type: String

Example: sapwdsecondary

Description: The host name or DNS short name to use for the secondary SAP Web Dispatcher node.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerSecureProtocolEnabled**

Type: String

AllowedValues: Yes | No

Description: Specifies the ACM certificate to use for your load balancer's TLS/HTTPS listener.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerACMCertificateArn**

Type: String

Example:

Description: The ARN of the ACM certificate to use for your load balancer's TLS/HTTPS listener.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, `InstallWebDispatcherLoadBalancer`, and `WebDispatcherLoadBalancerSecureProtocolEnabled` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerAvailabilityZone1SubnetId**

Type: String

Example: subnet-11111111aaaaaaaa

Description: The existing private subnet where you want to deploy SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerAvailabilityZone2SubnetId**

Type: String

Example: subnet-22222222aaaaaaaa

Description: The additional existing private subnet where you want to deploy SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherSecurityGroupId**

Type: String

Example:

sg-1234567890abcdef

Description: The security group to assign to your SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerSecurityGroupId**

Type: String

Example: sg-1234567890abcdef

Description: The security group to assign to the load balancer for SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **NewWebDispatcherSecurityGroupName**

Type: String

**Example:**

Description: The name of the security group to create for SAP Web Dispatcher.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, `InstallWebDispatcherLoadBalancer`, and `CreateSecurityGroup` are specified as Yes.

Required: Yes

- **WebDispatcherRhelByosUserName**

Type: String

Description: The username for the RHEL BYOS AMI.

Conditional:

This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherRhelByosUserPassword**

Type: String

Description: The password for the RHEL BYOS AMI.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherSlesByosRegistrationCode**

Type: String

Description: The registration code for the SUSE BYOS AMI.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WdByoip**

Type: String

Example: 10.0.0.1

Description: The BYOIP address to use.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WdVirtualByoip**

Type: String

Example: 10.0.0.2

Description: The virtual BYOIP address to use.

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `SapVirtualIpOptIn` are specified as Yes.

Required: Yes

- **WdSecondaryByoip**

Type: String

Example: 10.0.0.3

Description: The secondary BYOIP address to use.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WdSecondaryVirtualByoip**

Type: String

Example: 10.0.0.4

Description: The secondary virtual BYOIP address to use.

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `SapVirtualIpOptIn` are specified as Yes.

Required: Yes

- **WebDispatcherServerVirtualHostname**

Type: String

Example:

Description: The virtual hostname to use when you use a virtual BYOIP address.

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `SapVirtualIpOptIn` are specified as Yes.

Required: Yes

- **WebDispatcherSecondaryServerVirtualHostname**

Type: String

Example:

Description: The secondary virtual hostname to use when you use an additional virtual BYOIP address.

Conditional:

This specification can only be used if `InstallSapWebDispatcher` and `SapVirtualIpOptIn` are specified as Yes.

Required: Yes

- **WebDispatcherNewLoadBalancerSecurityGroupName**

Type: String

Example:

Description: The name of the security group to create for the load balancer for SAP Web Dispatcher.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, `InstallWebDispatcherLoadBalancer`, and `CreateSecurityGroup` are specified as Yes.

Required: Yes

## SapNWOOnHanaMulti

The following are examples of the specifications required to create multi-node deployments.

Multi-node deployment with HANA database software and infrastructure resources for all SAP components without installing SAP software:

```
{
  "KeyName": "ExampleKeyPair",
  "VpcId": "vpc-a1b2c3d4",
  "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
  "AvailabilityZone1PrivateSubnet2Id": "subnet-11111111bbbbbbbb",
  "Timezone": "PST",
  "EnableEbsVolumeEncryption": "Yes",
  "EbsKmsKeyArn": "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
  "CreateSecurityGroup": "No",
  "DatabaseSecurityGroupId": "sg-1234567890abcdef0",
  "ApplicationSecurityGroupId": "sg-021345abcdef6789",
  "SidAdmUserId": "7002",
  "SapSysGroupId": "5001",
  "DatabaseSystemId": "HYD",
  "SapSid": "S4K",
  "DatabaseInstanceNumber": "30",
  "InstallAwsBackintAgent": "Yes",
  "BackintSpecifications": "{\"backintBucketName\": \"launchwizardsoftware\",
  \"backintBucketFolder\": \"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-
  east-1\", \"backintKmsKeyArn\": \"arn:aws:kms:us-east-1:111122223333:alias/aws/
  s3\", \"backintAgentVersion\": \"2.0.2.732\", \"backintContinueOnFailure\": \"No\",
  \"backintCreateEbsVolume\": \"Yes\"}",
  "PasOperatingSystem": "SuSE-Linux-15-SP2-For-SAP-HVM",
  "PasAmiId": "ami-1234567890abcdef0",
  "PasAutomaticRecovery": "No",
  "PasInstanceType": "r5.2xlarge",
  "PasHostname": "pass4123",
  "InstallAas": "Yes",
  "AasHostCount": "2",
```



```

"AasAutomaticRecovery" : "Yes",
"AasInstanceType" : "r5.2xlarge",
"AasHostnames" : "aas4123,aas4124",
"DatabaseOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"DatabaseAmiId" : "ami-1234567890abcdef0",
"DatabaseInstanceType" : "r5.8xlarge",
"DatabaseHostCount" : "2",
"DatabasePrimaryHostname" : "db123",
"DatabaseSubordinateHostnames" : "subhan1,subhana2",
"SapPassword" : "EXAMPLE-PASSWORD",
"InstallSap" : "No",
"InstallDatabaseSoftware" : "Yes",
"DatabaseInstallationMediaS3Uri" : "s3://launchwizardsoftware/sapmedia/database/
hana-20-sp06-rev60",
"SetupTransportDomainController" : "No",
"SnsTopicArn" : "arn:aws:sns:us-east-1:111122223333:InstallStatus",
"SaveDeploymentArtifacts" : "Yes",
"DeploymentArtifactsS3Uri" : "s3://launchwizardsoftware",
"DisableDeploymentRollback" : "Yes",
"ApplicationDataVolumeType" : "gp3",
"DatabaseLogVolumeType" : "gp3",
"DatabaseAutomaticRecovery" : "Yes"
}

```

### Multi-node deployment with resources for all SAP components without SAP software installed:

```

{
  "KeyPairName": "ExampleKeyPair",
  "VpcId": "vpc-a1b2c3d4",
  "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
  "AvailabilityZone1PrivateSubnet2Id": "subnet-11111111bbbbbbbb",
  "Timezone" : "PST",
  "EnableEbsVolumeEncryption" : "Yes",
  "EbsKmsKeyArn" : "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
  "CreateSecurityGroup" : "No",
  "DatabaseSecurityGroupId" : "sg-1234567890abcdef0",
  "ApplicationSecurityGroupId" : "sg-021345abcdef6789",
  "SidAdmUserId" : "7002",
  "SapSysGroupId" : "5001",
  "DatabaseSystemId" : "HYD",
  "SapSid" : "S4K",
  "DatabaseInstanceNumber" : "30",
  "PasOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",

```

```

"PasAmiId" : "ami-1234567890abcdef0",
"PasAutomaticRecovery" : "No",
"PasInstanceType" : "r5.2xlarge",
"PasHostname" : "pass4123",
"InstallAas" : "Yes",
"AasHostCount" : "2",
"AasAutomaticRecovery" : "Yes",
"AasInstanceType" : "r5.2xlarge",
"AasHostnames" : "aas4123,aas4124",
"DatabaseOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"DatabaseAmiId" : "ami-1234567890abcdef0",
"DatabaseInstanceType" : "r5.8xlarge",
"DatabaseHostCount" : "2",
"DatabasePrimaryHostname" : "aas4123",
"DatabaseSubordinateHostnames" : "subhan1,subhana2",
"SapPassword" : "EXAMPLE-PASSWORD",
"InstallSap" : "No",
"InstallDatabaseSoftware" : "No",
"InstallAwsBackintAgent" : "No",
"SetupTransportDomainController" : "No",
"SnsTopicArn" : "arn:aws:sns:us-east-1:111122223333:InstallStatus",
"SaveDeploymentArtifacts" : "Yes",
"DeploymentArtifactsS3Uri" : "s3://launchwizardsoftware",
"DisableDeploymentRollback" : "Yes",
"ApplicationDataVolumeType" : "gp3",
"DatabaseLogVolumeType" : "gp3",
"DatabaseAutomaticRecovery" : "Yes"
}

```

### Multi-node deployment with SAP software installed:

```

{
  "KeyPairName": "ExampleKeyPair",
  "VpcId": "vpc-a1b2c3d4",
  "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
  "AvailabilityZone1PrivateSubnet2Id": "subnet-11111111bbbbbbbb",
  "Timezone" : "PST",
  "EnableEbsVolumeEncryption" : "Yes",
  "EbsKmsKeyArn" : "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
  "CreateSecurityGroup" : "No",
  "DatabaseSecurityGroupId" : "sg-1234567890abcdef0",
  "ApplicationSecurityGroupId" : "sg-021345abcdef6789",
  "SidAdmUserId" : "7002",

```

```

"SapSysGroupId" : "5001",
"DatabaseSystemId" : "HYD",
"SapSid" : "S4K",
"DatabaseInstanceNumber" : "30",
"InstallAwsBackintAgent" : "Yes",
"BackintSpecifications": "{ \"backintBucketName\" : \"launchwizardsoftware\",
 \"backintBucketFolder\" : \"HANABackintBucketFolder\", \"backintBucketRegion\" : \"us-
east-1\", \"backintKmsKeyArn\" : \"arn:aws:kms:us-east-1:111122223333:alias/aws/
s3\", \"backintAgentVersion\" : \"2.0.2.732\", \"backintContinueOnFailure\" : \"No\",
 \"backintCreateEbsVolume\" : \"Yes\" }",
"PasOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"PasAmiId" : "ami-1234567890abcdef0",
"PasAutomaticRecovery" : "No",
"PasInstanceType" : "r5.2xlarge",
"PasHostname" : "pass4123",
"InstallAas" : "Yes",
"AasHostCount" : "2",
"AasAutomaticRecovery" : "Yes",
"AasInstanceType" : "r5.2xlarge",
"AasHostnames" : "aas4123,aas4124",
"DatabaseOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
"DatabaseAmiId" : "ami-1234567890abcdef0",
"DatabaseInstanceType" : "r5.8xlarge",
"DatabaseHostCount" : "2",
"DatabasePrimaryHostname" : "aas4123",
"DatabaseSubordinateHostnames" : "subhan1,subhana2",
"SapPassword" : "EXAMPLE-PASSWORD",
"InstallSap" : "Yes",
"SetupTransportDomainController" : "No",
"SapInstallationSpecifications": "{ \"parameters\" : { \"PRODUCT_ID\" : \"saps4hana-2021\",
 \"HDB_SCHEMA_NAME\" : \"SAPABAP1\", \"CI_INSTANCE_NR\" : \"22\", \"ASCS_INSTANCE_NR
\" : \"20\", \"SAPINST_CD_SAPCAR\" : \"s3://launchwizardsoftware/sapmedia/sapcar
\", \"SAPINST_CD_SWPM\" : \"s3://launchwizardsoftware/sapmedia/swpm/20-sp10\",
 \"SAPINST_CD_KERNEL\" : \"s3://launchwizardsoftware/sapmedia/kernel/785\",
 \"SAPINST_CD_LOAD\" : \"s3://launchwizardsoftware/sapmedia/exports/s4h-2021\",
 \"SAPINST_CD_RDBMS\" : \"s3://launchwizardsoftware/sapmedia/database/hana-20-sp06-
rev60\", \"SAPINST_CD_RDBMS_CLIENT\" : \"s3://launchwizardsoftware/sapmedia/hana-
client/20-11\" }, \"onFailureBehaviour\" : \"CONTINUE\" }",
"SnsTopicArn" : "arn:aws:sns:us-east-1:111122223333:InstallStatus",
"SaveDeploymentArtifacts" : "Yes",
"DeploymentArtifactsS3Uri" : "s3://launchwizardsoftware",
"DisableDeploymentRollback" : "Yes",
"ApplicationDataVolumeType" : "gp3",
"DatabaseLogVolumeType" : "gp3",

```

```
"DatabaseAutomaticRecovery": "Yes"
}
```

Multi-node deployment with SAP Web Dispatcher, an Application Load Balancer with a secure protocol enabled, and SAP software installed:

```
{
  "AasAutomaticRecovery": "Yes",
  "AasHostCount": "1",
  "AasHostnames": "sapaas1",
  "AasInstanceType": "r5.4xlarge",
  "ApplicationDataVolumeType": "gp3",
  "applicationName": "WdT002zcpgc",
  "ApplicationSecurityGroupId": "sg-1234567890abcdef0",
  "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
  "AvailabilityZone2PrivateSubnet1Id": "subnet-22222222aaaaaaaa",
  "CreateSecurityGroup": "No",
  "DatabaseAmiId": "ami-0bea9de14f254d7dd",
  "DatabaseAutomaticRecovery": "Yes",
  "DatabaseDataVolumeType": "gp3",
  "DatabaseHostCount": "3",
  "DatabaseInstanceNumber": "30",
  "DatabaseInstanceType": "r5.4xlarge",
  "DatabaseLogVolumeType": "gp3",
  "DatabaseOperatingSystem": "SuSE-Linux-15-SP4-For-SAP-HVM",
  "DatabasePrimaryHostname": "aas4123",
  "DatabaseSecurityGroupId": "sg-1234567890abcdef0",
  "DatabaseSubordinateHostnames": "subhana1,subhana2",
  "DatabaseSystemId": "HDB",
  "DisableDeploymentRollback": "Yes",
  "EnableEbsVolumeEncryption": "No",
  "InstallAas": "Yes",
  "InstallAwsBackintAgent": "No",
  "InstallDatabaseSoftware": "Yes",
  "InstallSap": "Yes",
  "InstallSapWebDispatcher": "Yes",
  "InstallWebDispatcherLoadBalancer": "Yes",
  "KeyPairName": "ExampleKeyPair",
  "PasAmiId": "ami-0bea9de14f254d7dd",
  "PasAutomaticRecovery": "Yes",
  "PasHostname": "sappas",
  "PasInstanceType": "r5.4xlarge",
  "PasOperatingSystem": "SuSE-Linux-15-SP4-For-SAP-HVM",
```

```

"SapInstallationSpecifications": "{ \"parameters\": { \"PRODUCT_ID\":
\"sapNetweaver-752\", \"CI_INSTANCE_NR\": \"12\", \"ASCS_INSTANCE_NR\": \"10\",
\"WD_INSTANCE_NR\": \"14\", \"SAPINST_CD_SAPCAR\": \"s3://launchwizard-example/sapcar/\",
\"SAPINST_CD_SWPM\": \"s3://launchwizard-example/swpm/10-sp39/\", \"SAPINST_CD_KERNEL\":
\"s3://launchwizard-example/kernel/\", \"SAPINST_CD_LOAD\": \"s3://launchwizard-example/
exports/nw-752/\", \"SAPINST_CD_RDBMS\": \"s3://launchwizard-example/database/hana-20-
sp07/\", \"SAPINST_CD_RDBMS_CLIENT\": \"s3://launchwizard-example/hana-client/20-11/\",
\"SAPINST_CD_WD\": \"s3://launchwizard-example-us-east-1/webdisp/\" } }",
"SapPassword": "EXAMPLE-PASSWORD",
"SapSid": "SSD",
"SapSysGroupId": "5001",
"SaveDeploymentArtifacts": "No",
"SetupTransportDomainController": "No",
"SidAdmUserId": "7002",
"Timezone": "UTC",
"VpcId": "vpc-a1b2c3d4",
"WebDispatcherAdminUserId": "5100",
"WebDispatcherAmiId": "ami-0bea9de14f254d7dd",
"WebDispatcherAutoRecovery": "Yes",
"WebDispatcherAvailabilityZone1PrivateSubnetId": "subnet-11111111aaaaaaaa",
"WebDispatcherInstanceNumber": "14",
"WebDispatcherInstanceType": "r5.4xlarge",
"WebDispatcherLoadBalancerACMCertificateArn":
"arn:aws:acm:region:account:certificate/certificate_ID",
"WebDispatcherLoadBalancerAvailabilityZone1SubnetId": "subnet-11111111aaaaaaaa",
"WebDispatcherLoadBalancerAvailabilityZone2SubnetId": "subnet-22222222aaaaaaaa",
"WebDispatcherLoadBalancerInternetFacing": "No",
"WebDispatcherLoadBalancerSecureProtocolEnabled": "Yes",
"WebDispatcherLoadBalancerSecurityGroupId": "sg-1234567890abcdef0",
"WebDispatcherLoadBalancerType": "ALB",
"WebDispatcherOperatingSystem": "SuSE-Linux-15-SP4-For-SAP-HVM",
"WebDispatcherSecurityGroupId": "sg-1234567890abcdef0",
"WebDispatcherServerHostname": "sapwd",
"WebDispatcherSystemId": "WDD",
"WebDispatcherVersion": "7.93"
}

```

The following list describes each specification input:

- **KeyPairName**

Type: String

Constraints: Up to 255 ASCII characters

Example: home

Description: The name of an existing Amazon EC2 key pair. All instances will launch with this key pair.

Required: Yes

- **VpcId**

Type: String

Example: vpc-01234567890

Description: The existing Amazon VPC where you want to deploy the system.

Required: Yes

- **AvailabilityZone1PrivateSubnet1Id**

Type: String

Example: subnet-11111111aaaaaaaa

Description: The existing private subnet where you want to deploy the system.

Required: Yes

- **AvailabilityZone1PrivateSubnet2Id**

Type: String

Example: subnet-11111111bbbbbbbb

Description: The existing private subnet where you want to deploy the system.

Required: Yes

- **ProxyServerAddress**

Type: String

Example: http://10.x.x.x:8080

Description: The ProxyServerAddress address for http access. For example, *http://xyz.abc.com:8080* or *http://10.x.x.x:8080*.

Required: No

- **NoProxy**

Type: String

Example: http://10.x.x.x:8080

Description: A comma separated list of URLs, CIDR ranges, or IP addresses for which to disable ProxyServerAddress settings using the NO\_ProxyServerAddress environment variable. You can specify input for this specification when input has been provided for ProxyServerAddress. Any values you specify are appended to the default configuration for the NO\_ProxyServerAddress environment variable. The following entries are used by default:

```
NO_ProxyServerAddress="localhost,127.0.0.1,169.254.169.254,.internal,{VPC_CIDR_RANGE}"
```

Required: No

- **Timezone**

Type: String

Example: UTC

Description: The time zone to configure for your SAP resources.

Required: Yes

- **EnableEbsVolumeEncryption**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to encrypt the EBS volumes used for the deployment.

Required: Yes

- **EbsKmsKeyArn**

Type: String

Example: `arn:aws:kms:us-west-2:111122223333:key/1234abcd-12ab-34cd-56ef-1234567890ab`

Description: Specifies a KMS key ARN for encrypting EBS volumes when `EnableEbsVolumeEncryption` is set to Yes.

Conditional: If `EnableEbsVolumeEncryption` is Yes, you must specify a KMS key ARN.

Required: No

- **CreateSecurityGroup**

Type: String

AllowedValues: Yes | No

Description: Specifies whether you want to create new security groups for the deployment.

Required: Yes

- **NewSecurityGroupRules**

Type: String

Example: `"[{"type\":"ip\","value\":"10.0.0.0/32\"}, {"type\":"securityGroupId\","value\":"sg-0e1c107d640209244\"}]"`

Description: A list of CIDR blocks or Security Group IDs to be used for creating a new security group.

Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **NewDatabaseSecurityGroupName**

Type: String

Example: `dbsgname`

Description: The name of the database tier security group.



Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **NewApplicationSecurityGroupName**

Type: String

Example: `dbsgname`

Description: The name of the application tier security group.

Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **DatabaseSecurityGroupId**

Type: String

Example: `sg-1234567890abcdef`

Description: The security group ID for your HANA database.

Conditional: If you specify No for `CreateSecurityGroup`, you must provide an input for this configuration.

Required: No

- **ApplicationSecurityGroupId**

Type: String

Example: `sg-1234567890ghijkl`

Description: The security group ID for your SAP application.

Conditional: If you specify No for `CreateSecurityGroup`, you must provide an input for this configuration.

Required: No

- **DomainName**

Type: String

Example: example.com

Description: The domain name to be used for the deployment.

Required: No

- **HostedZoneName**

Type: String

Example: example.com

Description: The Amazon Route 53 hosted zone name.

Required: No

- **HostedZoneId**

Type: String

Example: Z36KTIQEXAMPLE

Description: Route 53 hosted zone id.

Conditional: If you specify a value for HostedZoneName, you must also provide input for this specification.

Required: No

- **DedicatedHostId**

Type: CommaDelimitedList String

Example: h-012a3456b7890cdef

Description: The existing Dedicated Hosts on which you want to launch your instances.

Conditional: If you are using Amazon EC2 High Memory Instances, you must provide an input for this specification. For more information on Amazon EC2 High Memory Instances, see [Amazon](#)

[EC2 High Memory Instances](#).

Required: No

- **ConfigurationScripts**

Type: String

```
Example: {"preConfigurationScripts":
{"onFailureBehaviour": "CONTINUE", "configurationScripts":
[{"nodeTypesToRunScriptFor": ["DB"], "s3URL": "s3://
launchwizard-scripts-preconfig-us-west-2/preconfig-
install.sh", "sequence": "0"}]}, "postConfigurationScripts":
{"onFailureBehaviour": "CONTINUE", "configurationScripts":
[{"nodeTypesToRunScriptFor": ["DB"], "s3URL": "s3://launchwizard-scripts-
postconfig-us-west-2/postconfig-install.sh", "sequence": "0"}]}}
```

Description: A list of pre- and post-configuration deployment scripts formatted as stringified JSON. You can specify one or more pre- or post-configuration scripts separately, or together. You must provide the follow details for each script:

- The URL for the script that has been uploaded to Amazon S3.
- A sequence number which specifies the order of execution.
- The type of node to run the script on. You can specify DB, and PAS.
- The behavior to use should a failure or timeout occur when running the script. You can specify CONTINUE to proceed with the deployment or ROLLBACK to cancel the deployment.

Required: No

- **SidAdmUserId**

Type: String

Example: 1002

Description: The UID for the <sid>adm user. The default UID is 1002.

Required: Yes

- **SapSysGroupId**

Type: String

Example: 1001

Description: GID for the sapsys group. The default GID is 1001.

Required: Yes

- **DatabaseSystemId**

Type: String

Constraints: This value must consist of 3 characters.

Example: HDB

Description: The SAP HANA system ID for installation and setup.

Required: Yes

- **SapSid**

Type: String

Constraints: This value must consist of 3 characters.

Example: HDB

Description: The SAP application system ID for installation and setup.

Required: Yes

- **ApplicationDataVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2

Description: The Amazon EBS volume type for the SAP application.

Required: Yes

- **DatabaseInstanceNumber**

Type: String

Constraints: The instance number must be between 00 and 97.

Example: 00

Description: The SAP HANA instance number to use for installation, setup, and to open ports for security groups.

Required: Yes

- **InstallAwsBackintAgent**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install the AWS Backint Agent for SAP HANA.

Conditional: This specification can only used in this deployment pattern if `InstallSap` is specified as Yes, or `InstallSap` is specified as No and `InstallDatabaseSoftware` is set to Yes.

Required: Yes

- **BackintSpecifications**

Type: String

Example:

```
{\"backintBucketName\": \"ExampleBucket\", \"backintBucketFolder\":  
  \"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-east-1\", \"backintKmsKeyArn  
  \": \"arn:aws:kms:us-east-1:111122223333:alias/aws/s3\", \"backintAgentVersion\":  
  \"2.0.2.732\", \"backintContinueOnFailure\": \"No\", \"backintCreateEbsVolume\": \"No\"}
```

Description: Parameters for the AWS Backint Agent for SAP HANA formatted as stringified JSON.

Conditional: If you specify Yes for `InstallAwsBackintAgent`, you must also provide input for this specification.

Required: No

- **PasOperatingSystem**

Type: String

Example: SuSE-Linux-12-SP5-For-SAP-HVM

Description: The operating system (including the version) for the PAS node.

Required: Yes

- **PasAmild**

Type: String

Example: ami-3333333333333333

Description: The AMI ID to use for the PAS node. The AMI can be provided by Amazon, sourced from AWS Marketplace, or with Bring your own images (BYOI). If the AMI from AWS Marketplace is using the Bring Your Own Subscription model (BYOS), you must provide the registration code for SUSE distributions or an account and password for RHEL distributions.

Required: Yes

- **PasByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the PAS node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **PasSlesByosRegistrationCode**

Type: String

Description: The SLES registration code for Bring Your Own Subscription model (BYOS) images.

Conditional: If you specify SUSE as the operating system, and it uses BYOS, you must also provide input for this specification.

Required: No

- **PasRhelByosUsername**

Type: String

Example: admin

Description: The username in the Red Hat Enterprise Linux (RHEL) operating system to use.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **PasRhelByosUserPassword**

Type: String

Description: The password for the user specified in PasRhelByosUsername.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **PasAutomaticRecovery**

Type: String

AllowedValues: Yes | No

Description: Specify Yes to enable Amazon CloudWatch action based recovery for the PAS node or No to keep it disabled. For HA deployments, set this value to No as the cluster will manage availability for the nodes.

Required: Yes

- **PasInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for the PAS node.

Required: Yes

- **PasHostname**

Type: String

Example: PASPrimary

Description: The host name or DNS short name to use for the PAS node.

Required: Yes

- **InstallAas**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install AAS instances.

Required: Yes

- **AasHostCount**

Type: Number

Min: 0

Max: 10

Description: The number of AAS instances to deploy.

Conditional: If you specify `true` for `InstallAas`, you must provide a value for this specification.

Required: Yes

- **AasByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the AAS node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Conditional: You must specify `true` for `InstallAas` to provide a value for this specification.

Required: No

- **AasAutomaticRecovery**

Type: String

AllowedValues: Yes | No



Description: Specify Yes to enable Amazon CloudWatch action based recovery for the PAS node or No to keep it disabled. For HA deployments, set this value to No as the cluster will manage availability for the nodes.

Conditional: If you specify `true` for `InstallAas`, you must provide a value for this specification.

Required: Yes

- **AasInstanceType**

Type: String

Example: `r5.2xlarge`

Description: The instance type used for the AAS node.

Conditional: If you specify `true` for `InstallAas`, you must provide a value for this specification.

Required: Yes

- **AasHostnames**

Type: String

Example: `AASPrimary`

Description: The host name or DNS short name to use for the AAS node.

Conditional: If you specify `true` for `InstallAas`, you must provide a value for this specification.

Required: Yes

- **DatabaseOperatingSystem**

Type: String

Example: `SuSE-Linux-12-SP5-For-SAP-HVM`

Description: The operating system (including the version) for SAP HANA.

AllowedValues: `SuSE-Linux-12-SP4-HVM` | `SuSE-Linux-12-SP4-For-SAP-HVM` | `SuSE-Linux-12-SP5-HVM` | `SuSE-Linux-12-SP5-For-SAP-HVM` | `SuSE-Linux-15-HVM` | `SuSE-Linux-15-For-SAP-HVM` | `SuSE-Linux-15-SP1-HVM` | `SuSE-Linux-15-SP1-`

For-SAP-HVM | SuSE-Linux-15-SP2-HVM | SuSE-Linux-15-SP2-For-SAP-HVM | SuSE-Linux-15-SP3-HVM | SuSE-Linux-15-SP3-For-SAP-HVM | SuSE-Linux-15-SP4-HVM | SuSE-Linux-15-SP4-For-SAP-HVM | Red-Hat-Enterprise-Linux-7.6-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.7-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.9-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.1-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.2-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.4-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.6-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.6-BYOS | Red-Hat-Enterprise-Linux-7.7-BYOS | Red-Hat-Enterprise-Linux-8.1-BYOS | Red-Hat-Enterprise-Linux-8.2-BYOS | Red-Hat-Enterprise-Linux-8.4-BYOS | Red-Hat-Enterprise-Linux-8.6-BYOS | SuSE-Linux-12-SP4-For-SAP-BYOS-HVM | SuSE-Linux-12-SP5-For-SAP-BYOS-HVM | SuSE-Linux-15-For-SAP-BYOS-HVM | SuSE-Linux-15-SP1-For-SAP-BYOS-HVM | SuSE-Linux-15-SP2-For-SAP-BYOS-HVM | SuSE-Linux-15-SP3-For-SAP-BYOS-HVM | SuSE-Linux-15-SP4-For-SAP-BYOS-HVM

Required: Yes

- **DatabaseAmild**

Type: String

Example: ami-1111111111111111

Description: The AMI ID to use for the SAP HANA nodes. The AMI can be provided by Amazon, sourced from AWS Marketplace, or with Bring your own images (BYOI). If the AMI from AWS Marketplace is using the Bring Your Own Subscription model (BYOS), you must provide the registration code for SUSE distributions or an account and password for RHEL distributions.

Required: Yes

- **DatabasePrimaryByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the primary SAP HANA node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **DatabaseStandbyByoips**

Type: String

Example: 10.0.1.11

Description: A private IPv4 address to be used by the standby SAP HANA node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **DatabaseAutomaticRecovery**

Type: String

AllowedValues: Yes | No

Description: Specify Yes to enable Amazon CloudWatch action based recovery for SAP Hana nodes or No to keep it disabled. For HA deployments, set this value to No as the cluster will manage availability for the nodes.

Required: Yes

- **DatabaseInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for SAP HANA nodes.

Required: Yes

- **DatabasePrimaryHostname**

Type: String

Example: HanaPrimary

Description: The host name or DNS short name to use for the primary SAP HANA node.

Required: Yes

- **DatabaseSubordinateHostnames**

Type: String

Example: SubordinateName1,SubordinateName2

Description: A comma-separated list of the host names or DNS short names to use for the subordinate nodes.

Required: No

- **DatabaseSlesByosRegistrationCode**

Type: String

Description: The SLES registration code for Bring Your Own Subscription model (BYOS) images.

Conditional: If you specify SUSE as the operating system, and it uses BYOS, you must also provide input for this specification.

Required: No

- **DatabaseRhelByosUserName**

Type: String

Example: admin

Description: The username in the Red Hat Enterprise Linux (RHEL) operating system to use.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **DatabaseRhelByosUserPassword**

Type: String

Description: The password for the user specified in DatabaseRhelByosUserName.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **SapPassword**

Type: String

Description: Specifies the password to use for setting up the SAP application and database defaults users. The password must:

- Be between 10 and 13 alphanumeric characters.
- Not begin with a number or special character.
- Have at least one uppercase letter.
- Have at least one lowercase letter.
- Have at least one digit.
- Only use the following special characters: #, @, and \_.

Required: Yes

- **DatabaseLogVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2 | fsx

Description: The Amazon EBS volume type, or FSx for ONTAP (if supported) file share, for database logging.

Conditional: If fsx is specified for DatabaseLogVolumeType, you must also specify fsx for DatabaseDataVolumeType.

Required: Yes

- **DatabaseOthersVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2

Default: gp3

Description: The Amazon EBS volume type for other file systems, including the root volume.

Conditional: If fsx is specified for DatabaseDataVolumeType and DatabaseLogVolumeType, you must provide input for this specification.

Required: No

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP HANA software.

Required: Yes

- **DatabaseInstallationMediaS3Uri**

Type: String

Example: s3://myhanabucket/sap-hana-sps11/

Description: The full path to the Amazon S3 location with SAP HANA installation media.

Required: No

- **DatabaseHostAutoFailover**

Type: String

AllowedValues: Yes | No

Description: Specified whether the SAP HANA host should use automatic failover.

Conditional: If you specify `fsx` for your volume types, you must also provide input for this specification.

Required: Yes

- **DatabaseStandbyNodeCount**

Type: Number

Min: 0

Max: 17

Description: The number of SAP HANA standby hosts to deploy.

Conditional: If you specify `fsx` for your volume types and `DatabaseHostAutoFailover` is set to Yes, you must also provide input for this specification.

Required: Yes

- **DatabaseStandbyHostnames**

Type: String

Example: standby1, standby2, standby3

Description: The host names, or DNS short names, to use for the SAP HANA standby nodes. You can specify multiple values as a comma-separated list.

Conditional: If you specify fsx for your volume types, you must also provide input for this specification.

Required: No

- **DatabaseStandbyByoips**

Type: String

Example: 10.0.1.11

Description: A private IPv4 address to be used by the standby SAP HANA node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **DatabaseHostCount**

Type: Number

Min: 1

Max: 17

Description: The number of hosts to deploy. When you specify 1 for Min, only the master HANA database is deployed in a scale-up architecture. When you specify 2 or higher for Min, subordinate nodes are deployed with the master HANA database in a scale-out architecture.

Required: Yes

- **DatabaseDataFsxVolumeSize**

Type: Number

Example: 500

Description: The volume size of the SAP HANA data volume on Amazon FSx, in GBs.

Conditional: If you specify `fsx` for `DatabaseDataVolumeType`, you must also provide input for this specification.

Required: No

- **DatabaseLogFsxVolumeSize**

Type: Number

Example: 50

Description: The volume size of the SAP HANA log volume on Amazon FSx, in GBs.

Conditional: If you specify `fsx` for `DatabaseLogVolumeType`, you must also provide input for this specification.

Required: No

- **DatabaseOtherFsxVolumeSize**

Type: Number

Example: 50

Description: The volume size of the other SAP HANA volume on Amazon FSx, in GBs.

Conditional: If you specify `fsx` for `DatabaseOthersVolumeType`, you must also provide input for this specification.

Required: No

- **SetupTransportDomainController**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to use transport FS.

Required: Yes



- **CreateTransportDomainControllerFileSystem**

Type: String

AllowedValues: Yes | No

Default: No

Description: Specifies whether to create a new Amazon EFS for the transport domain controller.

Conditional: You must specify No for SetupTransportDomainController to provide value for this specification.

Required: No

- **TransportDomainControllerFileSystemId**

Type: String

Example: fs-1234567890abcdef0

Description: The ID of an existing Elastic File System for the transport domain controller.

Conditional: If you specify No for CreateTransportDomainControllerFileSystem, you must also provide input for this specification.

Required: Yes

- **InstallSap**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP. The following specification combinations can be used to customize your application:

- To install SAP application software, specify No for InstallDatabaseSoftware and Yes for InstallSap.
- To install only the database software and deploy infrastructure resources for the application and database components, specify Yes for InstallDatabaseSoftware and No for InstallSap.

- To only deploy infrastructure resources for the SAP application and database components, specify No for `InstallDatabaseSoftware` and `InstallSap`.

Required: Yes

- SapInstallationSpecifications**

Type: String

Example without SAP Web Dispatcher: {"parameters":

```
{ "PRODUCT_ID": "saps4hana-2022", "HDB_SCHEMA_NAME": "SAPABAP1", "CI_INSTANCE_NR": "1", "SAPINST_CD_SWPM": "s3://launchwizard-test-sap-media/sapcar", "SAPINST_CD_KERNEL": "s3://launchwizard-test-sap-media/kernel", "SAPINST_CD_LOAD": "s3://launchwizard-test-sap-media/exports/nw-75", "SAPINST_CD_RDBMS": "s3://launchwizard-test-sap-media/database", "SAPINST_CD_RDBMS_CLIENT": "s3://launchwizard-test-sap-media/hana-client"}, "onFailureBehaviour": "CONTINUE/ROLLBACK"}
```

Example with SAP Web Dispatcher: {"parameters":

```
{ "PRODUCT_ID": "sapNetweaver-752", "CI_INSTANCE_NR": "12", "ASCS_INSTANCE_NR": "10", "WD_INSTANCE_NR": "1", "SAPINST_CD_SWPM": "s3://launchwizard-example/sapcar/", "SAPINST_CD_KERNEL": "s3://launchwizard-example/kernel/", "SAPINST_CD_LOAD": "s3://launchwizard-example/exports/nw-752/", "SAPINST_CD_RDBMS": "s3://launchwizard-example/database/hana-20-sp07/", "SAPINST_CD_RDBMS_CLIENT": "s3://launchwizard-example/hana-client/20-11/", "SAPINST_CD_WD": "s3://launchwizard-example-us-east-1/webdisp/"}
```

Description: A list of SAP Application installation parameters formatted as stringified JSON.

You can specify any of the following values for the `PRODUCT_ID`: `sapNetWeaver-752`

| `sapNetWeaver-750` | `sapNetweaverJavaOnly-750` | `saps4hana-1909` |  
`saps4hana-2020` | `saps4hana-2021` | `saps4hana-2022` | `saps4hana-2023`  
| `saps4hanafoundations-2021` | `saps4hanafoundations-2022` |  
`saps4hanafoundations-2023` | `sapbw4hana-2.0` | `sapbw4hana-2021` |  
`sapsolman-7.2`

Conditional: If you specify Yes for `InstallSap`, you must also provide input for this specification.

Required: No

- SnsTopicArn**

Type: String

Example: arn:aws:sns:us-east-1:1234567890:Test-Topic

Description: The Amazon SNS topic used to receive the final deployment status from Launch Wizard.

Required: No

- **DisableDeploymentRollback**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to disable rollback of the AWS CloudFormation stack if the stack creation fails.

Required: Yes

- **SaveDeploymentArtifacts**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to save the deployment artifacts in Service Catalog after deployment is complete.

Required: Yes

- **DeploymentArtifactsS3Uri**

Type: String

Example: s3://save-test-us-east-1

Description: The Amazon S3 URI in which to save the deployment artifacts for Service Catalog.

Required: No

- **InstallSapWebDispatcher**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP Web Dispatcher.

Required: No

- **InstallWebDispatcherLoadBalancer**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to deploy a load balancer in front of SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `InstallSap` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerType**

Type: String

AllowedValues: ALB | NLB

Description: Specifies the kind of load balancer to deploy in front of SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerInternetFacing**

Type: String

AllowedValues: Yes | No

Description: Specifies whether the load balancer in front of SAP Web Dispatcher is internet-facing.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherInstanceNumber**

Type: Number

Min: 00

Max: 97

Description: The double-digit instance number for the SAP Web Dispatcher instance.

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `InstallSap` are specified as Yes.

Required: Yes

- **WebDispatcherAdminUserId**

Type: Number

Min: 100

Max: 65536

Description: The user ID number for the SAP Web Dispatcher administrator.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherSystemId**

Type: String

Description: This value must consist of 3 uppercase characters.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherVersion**

Type: String

AllowedValues: 7.89

Description: The SAP Web Dispatcher version to use. For more information, see [Supported versions of SAP Web Dispatcher](#).

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `InstallSap` are specified as Yes.

Required: Yes

- **WebDispatcherOperatingSystem**

Type: String

AllowedValues: Yes | No

Description: The operating system to use for SAP Web Dispatcher nodes. For more information, see [Operating systems](#).

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherAmiId**

Type: String

Example: ami-4444444444444444

Description: The AMI ID to use for SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type to use for SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherAutoRecovery**

Type: String

AllowedValues: Yes | No

Description: .

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes. Specify Yes to enable Amazon CloudWatch action based recovery for the SAP Web Dispatcher nodes or No to keep it disabled.

Required: Yes

- **WebDispatcherAvailabilityZone1PrivateSubnetId**

Type: String

Example: subnet-11111111aaaaaaaa

Description: The existing private subnet where you want to deploy SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallWebDispatcherLoadBalancer` is specified as Yes.

Required: Yes

- **WebDispatcherServerHostname**

Type: String

Example: sapwdprimary

Description: The host name or DNS short name to use for the SAP Web Dispatcher node.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **`WebDispatcherLoadBalancerSecureProtocolEnabled`**

Type: String

AllowedValues: Yes | No

Description: Specifies the ACM certificate to use for your load balancer's TLS/HTTPS listener.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **`WebDispatcherLoadBalancerACMCertificateArn`**

Type: String

Example:

Description: The ARN of the ACM certificate to use for your load balancer's TLS/HTTPS listener.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, `InstallWebDispatcherLoadBalancer`, and `WebDispatcherLoadBalancerSecureProtocolEnabled` are specified as Yes.

Required: Yes

- **`WebDispatcherLoadBalancerAvailabilityZone1SubnetId`**

Type: String

Example: `subnet-11111111aaaaaaaa`

Description: The existing private subnet where you want to deploy SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.



Required: Yes

- **WebDispatcherLoadBalancerAvailabilityZone2SubnetId**

Type: String

Example: subnet-22222222aaaaaaaa

Description: The additional existing private subnet where you want to deploy SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherSecurityGroupId**

Type: String

Example:

sg-1234567890abcdef

Description: The security group to assign to your SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerSecurityGroupId**

Type: String

Example: sg-1234567890abcdef

Description: The security group to assign to the load balancer for SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **NewWebDispatcherSecurityGroupName**

Type: String

Example:

Description: The name of the security group to create for SAP Web Dispatcher.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, `InstallWebDispatcherLoadBalancer`, and `CreateSecurityGroup` are specified as Yes.

Required: Yes

- **WebDispatcherRhelByosUserName**

Type: String

Description: The username for the RHEL BYOS AMI.

Conditional:

This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherRhelByosUserPassword**

Type: String

Description: The password for the RHEL BYOS AMI.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherSlesByosRegistrationCode**

Type: String

Description: The registration code for the SUSE BYOS AMI.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as

Required: Yes

- **WdByoip**

Type: String

Example: 10.0.0.1

Description: The BYOIP address to use.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WdVirtualByoip**

Type: String

Example: 10.0.0.2

Description: The virtual BYOIP address to use.

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `SapVirtualIpOptIn` are specified as Yes.

Required: Yes

- **WebDispatcherServerVirtualHostname**

Type: String

Example:

Description: The virtual hostname to use when you use a virtual BYOIP address.

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `SapVirtualIpOptIn` are specified as Yes.

Required: Yes

- **WebDispatcherNewLoadBalancerSecurityGroupName**

Type: String

**Example:**

**Description:** The name of the security group to create for the load balancer for SAP Web Dispatcher.

**Conditional:** This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, `InstallWebDispatcherLoadBalancer`, and `CreateSecurityGroup` are specified as Yes.

**Required:** Yes

## SapNWOnHanaSingle

The following are examples of the specifications required to create single-node deployments.

### Single-node deployment with SAP software installed

```
{
  "KeyName": "ExampleKeyPair",
  "VpcId": "vpc-a1b2c3d4",
  "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
  "Timezone" : "PST",
  "EnableEbsVolumeEncryption" : "Yes",
  "EbsKmsKeyArn" : "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
  "CreateSecurityGroup" : "No",
  "DatabaseSecurityGroupId" : "sg-1234567890abcdef0",
  "ApplicationSecurityGroupId" : "sg-021345abcdef6789",
  "SidAdmUserId" : "7002",
  "SapSysGroupId" : "5001",
  "DatabaseSystemId" : "HYD",
  "SapSid" : "S4K",
  "ApplicationDataVolumeType" : "gp2",
  "DatabaseInstanceNumber" : "30",
  "InstallAwsBackintAgent" : "Yes",
  "BackintSpecifications": "{ \"backintBucketName\": \"launchwizardsoftware\",
  \"backintBucketFolder\": \"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-
  east-1\", \"backintKmsKeyArn\": \"arn:aws:kms:us-east-1:111122223333:alias/aws/
  s3\", \"backintAgentVersion\": \"2.0.2.732\", \"backintContinueOnFailure\": \"No\",
  \"backintCreateEbsVolume\": \"No\" }",
  "CentralSystemOperatingSystem" : "SuSE-Linux-15-SP2-For-SAP-HVM",
  "CentralSystemAmiId" : "ami-1234567890abcdef0",
  "CentralSystemInstanceType" : "r5.8xlarge",
```

```

"CentralSystemHostname" : "sapci",
"SapPassword" : "EXAMPLE-PASSWORD",
"DatabaseLogVolumeType" : "io2",
"SetupTransportDomainController" : "Yes",
"InstallSap" : "Yes",
"SapInstallationSpecifications": "{ \"parameters\": { \"PRODUCT_ID\": \"saps4hana-2021\",
\"HDB_SCHEMA_NAME\": \"SAPABAP1\", \"CI_INSTANCE_NR\": \"22\", \"ASCS_INSTANCE_NR
\": \"20\", \"SAPINST_CD_SAPCAR\": \"s3://launchwizardsoftware/sapmedia/sapcar
\", \"SAPINST_CD_SWPM\": \"s3://launchwizardsoftware/sapmedia/swpm/20-sp10\",
\"SAPINST_CD_KERNEL\": \"s3://launchwizardsoftware/sapmedia/kernel/785\",
\"SAPINST_CD_LOAD\": \"s3://launchwizardsoftware/sapmedia/exports/s4h-2021\",
\"SAPINST_CD_RDBMS\": \"s3://launchwizardsoftware/sapmedia/database/hana-20-sp06-
rev60\", \"SAPINST_CD_RDBMS_CLIENT\": \"s3://launchwizardsoftware/sapmedia/hana-
client/20-11\"}, \"onFailureBehaviour\": \"CONTINUE\"}",
"SnsTopicArn" : "arn:aws:sns:us-east-1:111122223333:InstallStatus",
"SaveDeploymentArtifacts" : "Yes",
"DeploymentArtifactsS3Uri" : "s3://launchwizardsoftware",
"DisableDeploymentRollback" : "Yes",
"CentralSystemAutomaticRecovery": "Yes",
"DatabaseDataVolumeType": "gp3"
}

```

### Single-node deployment with only HANA database software installed:

```

{
  "KeyName": "ExampleKeyPair",
  "VpcId": "vpc-a1b2c3d4",
  "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
  "Timezone": "PST",
  "EnableEbsVolumeEncryption": "Yes",
  "EbsKmsKeyArn": "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
  "CreateSecurityGroup": "No",
  "DatabaseSecurityGroupId": "sg-1234567890abcdef0",
  "ApplicationSecurityGroupId": "sg-021345abcdef6789",
  "SidAdmUserId": "7002",
  "SapSysGroupId": "5001",
  "DatabaseSystemId": "HYD",
  "SapSid": "S4K",
  "ApplicationDataVolumeType": "gp2",
  "DatabaseInstanceNumber": "30",
  "InstallSap": "No",
  "InstallDatabaseSoftware": "Yes",

```

```

    "DatabaseInstallationMediaS3Uri": "s3://launchwizardsoftware/sapmedia/database/
hana-20-sp06-rev60",
    "InstallAwsBackintAgent": "Yes",
    "BackintSpecifications": "{\"backintBucketName\":\"launchwizardsoftware\",
\"backintBucketFolder\":\"HANABackintBucketFolder\", \"backintBucketRegion\":\"us-
east-1\", \"backintKmsKeyArn\":\"arn:aws:kms:us-east-1:111122223333:alias/aws/
s3\", \"backintAgentVersion\":\"2.0.2.732\", \"backintContinueOnFailure\":\"No\",
\"backintCreateEbsVolume\":\"No\"}",
    "CentralSystemOperatingSystem": "SuSE-Linux-15-SP2-For-SAP-HVM",
    "CentralSystemAmiId": "ami-1234567890abcdef0",
    "CentralSystemInstanceType": "r5.8xlarge",
    "CentralSystemHostname": "sapci",
    "SapPassword": "EXAMPLE-PASSWORD",
    "DatabaseLogVolumeType": "io2",
    "SetupTransportDomainController": "Yes",
    "SnsTopicArn": "arn:aws:sns:us-east-1:111122223333:InstallStatus",
    "SaveDeploymentArtifacts": "Yes",
    "DeploymentArtifactsS3Uri": "s3://launchwizardsoftware",
    "DisableDeploymentRollback": "Yes",
    "CentralSystemAutomaticRecovery": "Yes",
    "DatabaseDataVolumeType": "gp3"
}

```

### Single-node deployment with only infrastructure resources:

```

{
    "KeyName": "ExampleKeyPair",
    "VpcId": "vpc-a1b2c3d4",
    "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
    "Timezone": "PST",
    "EnableEbsVolumeEncryption": "Yes",
    "EbsKmsKeyArn": "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
    "CreateSecurityGroup": "No",
    "DatabaseSecurityGroupId": "sg-1234567890abcdef0",
    "ApplicationSecurityGroupId": "sg-021345abcdef6789",
    "SidAdmUserId": "7002",
    "SapSysGroupId": "5001",
    "DatabaseSystemId": "HYD",
    "SapSid": "S4K",
    "ApplicationDataVolumeType": "gp2",
    "DatabaseInstanceNumber": "30",
    "InstallAwsBackintAgent": "Yes",

```

```

    "BackintSpecifications": "{ \"backintBucketName\": \"launchwizardsoftware\",
    \"backintBucketFolder\": \"HANABackintBucketFolder\", \"backintBucketRegion\": \"us-
    east-1\", \"backintKmsKeyArn\": \"arn:aws:kms:us-east-1:111122223333:alias/aws/
    s3\", \"backintAgentVersion\": \"2.0.2.732\", \"backintContinueOnFailure\": \"No\",
    \"backintCreateEbsVolume\": \"No\" }",
    "CentralSystemOperatingSystem": "SuSE-Linux-15-SP2-For-SAP-HVM",
    "CentralSystemAmiId": "ami-1234567890abcdef0",
    "CentralSystemInstanceType": "r5.8xlarge",
    "CentralSystemHostname": "sapci",
    "SapPassword": "EXAMPLE-PASSWORD",
    "DatabaseLogVolumeType": "io2",
    "SetupTransportDomainController": "Yes",
    "InstallSap": "No",
    "InstallDatabaseSoftware": "No",
    "SnsTopicArn": "arn:aws:sns:us-east-1:111122223333:InstallStatus",
    "SaveDeploymentArtifacts": "Yes",
    "DeploymentArtifactsS3Uri": "s3://launchwizardsoftware",
    "DisableDeploymentRollback": "Yes",
    "CentralSystemAutomaticRecovery": "Yes",
    "DatabaseDataVolumeType": "gp3"
}

```

Single-node deployment with SAP Web Dispatcher, an Application Load Balancer with a secure protocol enabled, and SAP software installed:

```

{
  "ApplicationDataVolumeType": "gp3",
  "applicationName": "ExampleApp",
  "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
  "CentralSystemAmiId": "ami-1234567890abcdef0",
  "CentralSystemAutomaticRecovery": "Yes",
  "CentralSystemHostname": "sappas",
  "CentralSystemInstanceType": "r5.4xlarge",
  "CentralSystemOperatingSystem": "Red-Hat-Enterprise-Linux-9.0-For-SAP-HA-US-HVM",
  "CreateSecurityGroup": "Yes",
  "DatabaseDataVolumeType": "gp3",
  "DatabaseInstanceNumber": "11",
  "DatabaseLogVolumeType": "gp3",
  "DatabaseOthersVolumeType": "gp3",
  "DatabaseSystemId": "HDB",
  "DisableDeploymentRollback": "Yes",
  "Ec2InstanceRoleName": "AmazonEC2RoleForLaunchWizard",
  "EnableCloudwatchLogs": "Yes",

```

```

"EnableEbsVolumeEncryption": "No",
"InstallAwsBackintAgent": "No",
"InstallDatabaseSoftware": "Yes",
"InstallSap": "Yes",
"InstallSapWebDispatcher": "Yes",
"InstallWebDispatcherLoadBalancer": "Yes",
"KeyPairName": "ExampleKeyPair",
"NewApplicationSecurityGroupName": "ExampleApp_App_SG",
"NewDatabaseSecurityGroupName": "ExampleApp_DB_SG",
"NewSecurityGroupRules": "[{\"type\":\"ip\",\"value\":\"10.0.0.0/32\"}]",
"NewWebDispatcherSecurityGroupName": "ExampleApp_WD_SG",
"SapInstallationSpecifications": "{\"parameters\":{\"PRODUCT_ID\":
\"sapNetweaverJavaOnly-750\", \"JAVA_SCHEMA_NAME\": \"SAPJAVA1\", \"JAVA_CI_INSTANCE_NR
\": \"12\", \"JAVA_SCS_INSTANCE_NR\": \"10\", \"WD_INSTANCE_NR\": \"14\", \"SAPINST_CD_SAPCAR
\": \"s3://launchwizard-example/sapcar/\", \"SAPINST_CD_SWPM\": \"s3://launchwizard-
example/swpm/10-sp39/\", \"SAPINST_CD_KERNEL\": \"s3://launchwizard-example/kernel/
\", \"SAPINST_CD_LOAD\": \"s3://launchwizard-example/exports/netweaverJava-750/
\", \"SAPINST_CD_RDBMS\": \"s3://launchwizard-example/database/hana-20-sp07/\",
\"SAPINST_CD_RDBMS_CLIENT\": \"s3://launchwizard-example/hana-client/20-11/\",
\"SAPINST_CD_WD\": \"s3://launchwizard-example-us-east-1/webdisp/\"}}",
"SapPassword": "EXAMPLE-PASSWORD",
"SapSid": "SDB",
"SapSysGroupId": "5001",
"SaveDeploymentArtifacts": "No",
"SetupTransportDomainController": "No",
"SidAdmUserId": "5000",
"Timezone": "UTC",
"VpcId": "vpc-a1b2c3d4",
"WebDispatcherAdminUserId": "5100",
"WebDispatcherInstanceNumber": "14",
"WebDispatcherLoadBalancerACMCertificateArn":
"arn:aws:acm:region:account:certificate/certificate_ID",
"WebDispatcherLoadBalancerAvailabilityZone1SubnetId": "subnet-11111111aaaaaaaa",
"WebDispatcherLoadBalancerAvailabilityZone2SubnetId": "subnet-22222222aaaaaaaa",
"WebDispatcherLoadBalancerInternetFacing": "Yes",
"WebDispatcherLoadBalancerSecureProtocolEnabled": "Yes",
"WebDispatcherLoadBalancerType": "ALB",
"WebDispatcherNewLoadBalancerSecurityGroupName": "ExampleApp_WDLB_SG",
"WebDispatcherSystemId": "WDD",
"WebDispatcherVersion": "7.93"
}

```

The following list describes each specification input:



- **KeyPairName**

Type: String

Constraints: Up to 255 ASCII characters

Example: home

Description: The name of an existing Amazon EC2 key pair. All instances will launch with this key pair.

Required: Yes

- **VpcId**

Type: String

Example: vpc-01234567890

Description: The existing Amazon VPC where you want to deploy the system.

Required: Yes

- **AvailabilityZone1PrivateSubnet1Id**

Type: String

Example: subnet-11111111aaaaaaaa

Description: The existing private subnet where you want to deploy the system.

Required: Yes

- **ProxyServerAddress**

Type: String

Example: http://10.x.x.x:8080

Description: The ProxyServerAddress address for http access. For example, *http://xyz.abc.com:8080* or *http://10.x.x.x:8080*.

Required: No

Type: String

Example: http://10.x.x.x:8080

Description: A comma separated list of URLs, CIDR ranges, or IP addresses for which to disable ProxyServerAddress settings using the NO\_ProxyServerAddress environment variable. You can specify input for this specification when input has been provided for ProxyServerAddress. Any values you specify are appended to the default configuration for the NO\_ProxyServerAddress environment variable. The following entries are used by default:

```
NO_ProxyServerAddress="localhost,127.0.0.1,169.254.169.254,.internal,
{VPC_CIDR_RANGE}"
```

Required: No

- **Timezone**

Type: String

Example: UTC

Description: The time zone to configure for your SAP resources.

Required: Yes

- **EnableEbsVolumeEncryption**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to encrypt the EBS volumes used for the deployment.

Required: Yes

- **EbsKmsKeyArn**

Type: String

Example: arn:aws:kms:us-west-2:111122223333:key/1234abcd-12ab-34cd-56ef-1234567890ab

Description: Specifies a KMS key ARN for encrypting EBS volumes when EnableEbsVolumeEncryption is set to Yes.

Conditional: If EnableEbsVolumeEncryption is Yes, you must specify a KMS key ARN.

Required: No

- **CreateSecurityGroup**

Type: String

AllowedValues: Yes | No

Description: Specifies whether you want to create new security groups for the deployment.

Required: Yes

- **NewSecurityGroupRules**

Type: String

Example: "[{"type":"ip","value":"10.0.0.0/32"}, {"type":  
"securityGroupId","value":"sg-0e1c107d640209244"}]"

Description: A list of CIDR blocks or Security Group IDs to be used for creating a new security group.

Conditional: If you specify Yes for CreateSecurityGroup, you must also provide input for this configuration.

Required: No

- **NewDatabaseSecurityGroupName**

Type: String

Example: dbsgname

Description: The name of the database tier security group.

Conditional: If you specify Yes for CreateSecurityGroup, you must also provide input for this configuration.

Required: No

- **NewApplicationSecurityGroupName**

Type: String

Example: dbsgname

Description: The name of the application tier security group.

Conditional: If you specify Yes for CreateSecurityGroup, you must also provide input for this configuration.

Required: No

- **DatabaseSecurityGroupId**

Type: String

Example: sg-1234567890abcdef

Description: The security group ID for your HANA database.

Conditional: If you specify No for CreateSecurityGroup, you must provide an input for this configuration.

Required: No

- **ApplicationSecurityGroupId**

Type: String

Example: sg-1234567890ghijkl

Description: The security group ID for your SAP application.

Conditional: If you specify No for CreateSecurityGroup, you must provide an input for this configuration.

Required: No

- **DomainName**

Type: String

Example: example.com

Description: The domain name to be used for the deployment.

Required: No

- **HostedZoneName**

Type: String

Example: example.com

Description: The Amazon Route 53 hosted zone name.

Required: No

- **HostedZoneId**

Type: String

Example: Z36KTIQEXAMPLE

Description: Route 53 hosted zone id.

Conditional: If you specify a value for HostedZoneName, you must also provide input for this specification.

Required: No

- **DedicatedHostId**

Type: CommaDelimitedList String

Example: h-012a3456b7890cdef

Description: The existing Dedicated Hosts on which you want to launch your instances.

Conditional: If you are using Amazon EC2 High Memory Instances, you must provide an input for this specification. For more information on Amazon EC2 High Memory Instances, see [Amazon EC2 High Memory Instances](#).

Required: No

- **ConfigurationScripts**

Type: String

```
Example: {"preConfigurationScripts":
{"onFailureBehaviour": "CONTINUE", "configurationScripts":
[{"nodeTypesToRunScriptFor": ["DB"], "s3URL": "s3://
launchwizard-scripts-preconfig-us-west-2/preconfig-
install.sh", "sequence": "0"}]}, "postConfigurationScripts":
{"onFailureBehaviour": "CONTINUE", "configurationScripts":
[{"nodeTypesToRunScriptFor": ["DB"], "s3URL": "s3://launchwizard-scripts-
postconfig-us-west-2/postconfig-install.sh", "sequence": "0"}]}}
```

Description: A list of pre- and post-configuration deployment scripts formatted as stringified JSON. You can specify one or more pre- or post-configuration scripts separately, or together. You must provide the follow details for each script:

- The URL for the script that has been uploaded to Amazon S3.
- A sequence number which specifies the order of execution.
- The type of node to run the script on. You can only specify DB for this deployment.
- The behavior to use should a failure or timeout occur when running the script. You can specify CONTINUE to proceed with the deployment or ROLLBACK to cancel the deployment.

Required: No

- **SidAdmUserId**

Type: String

Example: 1002

Description: The UID for the <sid>adm user. The default UID is 1002.

Required: Yes

- **SapSysGroupId**

Type: String

Example: 1001

Description: GID for the sapsys group. The default GID is 1001.

Required: Yes

- **DatabaseSystemId**

Type: String

Constraints: This value must consist of 3 characters.

Example: HDB

Description: The SAP HANA system ID for installation and setup.

Required: Yes

- **SapSid**

Type: String

Constraints: This value must consist of 3 characters.

Example: HDB

Description: The SAP application system ID for installation and setup.

Required: Yes

- **ApplicationDataVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2

Description: The Amazon EBS volume type for the SAP application.

Required: Yes

- **DatabaseInstanceNumber**

Type: String

Constraints: The instance number must be between 00 and 97.

Example: 00

Description: The SAP HANA instance number to use for installation, setup, and to open ports for security groups.

Required: Yes

- **InstallAwsBackintAgent**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install the AWS Backint Agent for SAP HANA.

Conditional: This specification can only used in this deployment pattern if InstallSap is specified as Yes, or InstallSap is specified as No and InstallDatabaseSoftware is set to Yes.

Required: Yes

- **BackintSpecifications**

Type: String

Example:

```
"{"backintBucketName":"ExampleBucket","backintBucketFolder":  
"HANABackintBucketFolder","backintBucketRegion":"us-east-1","backintKmsKeyArn  
":"arn:aws:kms:us-east-1:111122223333:alias/aws/s3","backintAgentVersion":  
"2.0.2.732","backintContinueOnFailure":"No","backintCreateEbsVolume":"No"}"
```

Description: Parameters for the AWS Backint Agent for SAP HANA formatted as stringified JSON.

Conditional: If you specify Yes for InstallAwsBackintAgent, you must also provide input for this specification.

Required: No

- **PasOperatingSystem**

Type: String

Example: SuSE-Linux-12-SP5-For-SAP-HVM

Description: The operating system (including the version) for the PAS node.

Required: Yes

- **PasAmild**



Type: String

Example: ami-3333333333333333

Description: The AMI ID to use for the PAS node. The AMI can be provided by Amazon, sourced from AWS Marketplace, or with Bring your own images (BYOI). If the AMI from AWS Marketplace is using the Bring Your Own Subscription model (BYOS), you must provide the registration code for SUSE distributions or an account and password for RHEL distributions.

Required: Yes

- **PasByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the PAS node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **PasSlesByosRegistrationCode**

Type: String

Description: The SLES registration code for Bring Your Own Subscription model (BYOS) images.

Conditional: If you specify SUSE as the operating system, and it uses BYOS, you must also provide input for this specification.

Required: No

- **PasRhelByosUsername**

Type: String

Example: admin

Description: The username in the Red Hat Enterprise Linux (RHEL) operating system to use.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **PasRhelByosUserPassword**

Type: String

Description: The password for the user specified in PasRhelByosUsername.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **PasAutomaticRecovery**

Type: String

AllowedValues: Yes | No

Description: Specify Yes to enable Amazon CloudWatch action based recovery for the PAS node or No to keep it disabled. For HA deployments, set this value to No as the cluster will manage availability for the nodes.

Required: Yes

- **PasInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for the PAS node.

Required: Yes

- **PasHostname**

Type: String

Example: PASPrimary

Description: The host name or DNS short name to use for the PAS node.

Required: Yes

- **InstallAas**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install AAS instances.

Required: Yes

- **AasHostCount**

Type: Number

Min: 0

Max: 10

Description: The number of AAS instances to deploy.

Conditional: If you specify `true` for `InstallAas`, you must provide a value for this specification.

Required: Yes

- **AasByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the AAS node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Conditional: You must specify `true` for `InstallAas` to provide a value for this specification.

Required: No

- **AasAutomaticRecovery**

Type: String

AllowedValues: Yes | No

Description: Specify `Yes` to enable Amazon CloudWatch action based recovery for the PAS node or `No` to keep it disabled. For HA deployments, set this value to `No` as the cluster will manage availability for the nodes.

Conditional: If you specify `true` for `InstallAas`, you must provide a value for this specification.

Required: Yes

- **AasInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for the AAS node.

Conditional: If you specify `true` for `InstallAas`, you must provide a value for this specification.

Required: Yes

- **AasHostnames**

Type: String

Example: AASPrimary

Description: The host name or DNS short name to use for the AAS node.

Conditional: If you specify `true` for `InstallAas`, you must provide a value for this specification.

Required: Yes

- **CentralSystemOperatingSystem**

Type: String

Example: SuSE-Linux-12-SP5-For-SAP-HVM

Description: The operating system (including the version) for database.

AllowedValues: SuSE-Linux-12-SP4-HVM | SuSE-Linux-12-SP4-For-SAP-HVM | SuSE-Linux-12-SP5-HVM | SuSE-Linux-12-SP5-For-SAP-HVM | SuSE-Linux-15-HVM | SuSE-Linux-15-For-SAP-HVM | SuSE-Linux-15-SP1-HVM | SuSE-Linux-15-SP1-For-SAP-HVM | SuSE-Linux-15-SP2-HVM | SuSE-Linux-15-SP2-For-SAP-HVM | SuSE-Linux-15-SP3-HVM | SuSE-Linux-15-SP3-For-SAP-HVM | SuSE-Linux-15-SP4-HVM | SuSE-Linux-15-SP4-For-SAP-HVM | Red-Hat-Enterprise-Linux-7.6-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.7-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.9-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.1-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.2-For-SAP-

HA-US-HVM | Red-Hat-Enterprise-Linux-8.4-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.6-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.6-BYOS | Red-Hat-Enterprise-Linux-7.7-BYOS | Red-Hat-Enterprise-Linux-8.1-BYOS | Red-Hat-Enterprise-Linux-8.2-BYOS | Red-Hat-Enterprise-Linux-8.4-BYOS | Red-Hat-Enterprise-Linux-8.6-BYOS | SuSE-Linux-12-SP4-For-SAP-BYOS-HVM | SuSE-Linux-12-SP5-For-SAP-BYOS-HVM | SuSE-Linux-15-For-SAP-BYOS-HVM | SuSE-Linux-15-SP1-For-SAP-BYOS-HVM | SuSE-Linux-15-SP2-For-SAP-BYOS-HVM | SuSE-Linux-15-SP3-For-SAP-BYOS-HVM | SuSE-Linux-15-SP4-For-SAP-BYOS-HVM

Required: Yes

- **CentralSystemAmild**

Type: String

Example: ami-1111111111111111

Description: The AMI ID to use for the database nodes. The AMI can be provided by Amazon, sourced from AWS Marketplace, or with Bring your own images (BYOI). If the AMI from AWS Marketplace is using the Bring Your Own Subscription model (BYOS), you must provide the registration code for SUSE distributions or an account and password for RHEL distributions.

Required: Yes

- **CentralSystemByoip**

Type: String

Example: 10.0.1.10

Description: A private IPv4 address to be used by the primary SAP HANA node. If no value is provided, Amazon EC2 will assign an available IPv4 address in the subnet.

Required: No

- **CentralSystemAutomaticRecovery**

Type: String

AllowedValues: Yes | No

Description: Specify Yes to enable Amazon CloudWatch action based recovery for database nodes or No to keep it disabled. For HA deployments, set this value to No as the cluster will manage availability for the nodes.

Required: Yes

- **CentralSystemInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for database nodes.

Required: Yes

- **CentralSystemHostname**

Type: String

Example: sapci

Description: The host name or DNS short name to use for the primary database node.

Required: Yes

- **CentralSystemSlesByosRegistrationCode**

Type: String

Description: The SLES registration code for Bring Your Own Subscription model (BYOS) images.

Conditional: If you specify SUSE as the operating system, and it uses BYOS, you must also provide input for this specification.

Required: No

- **CentralSystemRhelByosUserName**

Type: String

Example: admin

Description: The username in the Red Hat Enterprise Linux (RHEL) operating system to use.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **CentralSystemRhelByosUserPassword**

Type: String

Description: The password for the user specified in DatabaseRhelByosUserName.

Conditional: If you specify a BYOS RHEL AMI, you must also provide input for this specification.

Required: No

- **SapPassword**

Type: String

Description: Specifies the password to use for setting up the SAP application and database defaults users. The password must:

- Be between 10 and 13 alphanumeric characters.
- Not begin with a number or special character.
- Have at least one uppercase letter.
- Have at least one lowercase letter.
- Have at least one digit.
- Only use the following special characters: #, @, and \_.

Required: Yes

- **DatabaseLogVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2 | fsx

Description: The Amazon EBS volume type, or FSx for ONTAP (if supported) file share, for database logging.

Conditional: If fsx is specified for DatabaseLogVolumeType, you must also specify fsx for DatabaseDataVolumeType.

Required: Yes

- **DatabaseOthersVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2

Default: gp3

Description: The Amazon EBS volume type for other file systems, including the root volume.

Conditional: If fsx is specified for DatabaseDataVolumeType and DatabaseLogVolumeType, you must provide input for this specification.

Required: No

- **InstallDatabaseSoftware**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP HANA software.

Required: Yes

- **DatabaseInstallationMediaS3Uri**

Type: String

Example: s3://myhanabucket/sap-hana-sps11/

Description: The full path to the Amazon S3 location with SAP HANA installation media.

Required: No

- **DatabaseDataFsxVolumeSize**

Type: Number

Example: 500

Description: The volume size of the SAP HANA data volume on Amazon FSx, in GBs.



Conditional: If you specify `fsx` for `DatabaseDataVolumeType`, you must also provide input for this specification.

Required: No

- **DatabaseLogFsxVolumeSize**

Type: Number

Example: 50

Description: The volume size of the SAP HANA log volume on Amazon FSx, in GBs.

Conditional: If you specify `fsx` for `DatabaseLogVolumeType`, you must also provide input for this specification.

Required: No

- **DatabaseOtherFsxVolumeSize**

Type: Number

Example: 50

Description: The volume size of the other SAP HANA volume on Amazon FSx, in GBs.

Conditional: If you specify `fsx` for `DatabaseOthersVolumeType`, you must also provide input for this specification.

Required: No

- **SetupTransportDomainController**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to use transport FS.

Required: Yes

- **CreateTransportDomainControllerFileSystem**

Type: String

AllowedValues: Yes | No

Default: No

Description: Specifies whether to create a new Amazon EFS for the transport domain controller.

Conditional: You must specify No for `SetupTransportDomainController` to provide value for this specification.

Required: No

- **TransportDomainControllerFileSystemId**

Type: String

Example: fs-1234567890abcdef0

Description: The ID of an existing Elastic File System for the transport domain controller.

Conditional: If you specify No for `CreateTransportDomainControllerFileSystem`, you must also provide input for this specification.

Required: Yes

- **InstallSap**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP. The following specification combinations can be used to customize your application:

- To install SAP application software, specify No for `InstallDatabaseSoftware` and Yes for `InstallSap`.
- To install only the database software and deploy infrastructure resources for the application and database components, specify Yes for `InstallDatabaseSoftware` and No for `InstallSap`.
- To only deploy infrastructure resources for the SAP application and database components, specify No for `InstallDatabaseSoftware` and `InstallSap`.

Required: Yes

- **SapInstallationSpecifications**

Type: String

Example without SAP Web Dispatcher: {"parameters":

```
{"PRODUCT_ID": "saps4hana-2022", "HDB_SCHEMA_NAME": "SAPABAP1", "CI_INSTANCE_NR": "12", "ASCS_INSTANCE_NR": "10", "WD_INSTANCE_NR": "1", "SAPINST_CD_SWPM": "s3://launchwizard-test-sap-media/sapcar", "SAPINST_CD_KERNEL": "s3://launchwizard-test-sap-media/kernel", "SAPINST_CD_LOAD": "s3://launchwizard-test-sap-media/exports/nw-75", "SAPINST_CD_RDBMS": "s3://launchwizard-test-sap-media/database", "SAPINST_CD_RDBMS_CLIENT": "s3://launchwizard-test-sap-media/hana-client"}, "onFailureBehaviour": "CONTINUE/ROLLBACK"}
```

Example with SAP Web Dispatcher: {"parameters":

```
{"PRODUCT_ID": "sapNetweaver-752", "CI_INSTANCE_NR": "12", "ASCS_INSTANCE_NR": "10", "WD_INSTANCE_NR": "1", "SAPINST_CD_SWPM": "s3://launchwizard-example/sapcar/", "SAPINST_CD_KERNEL": "s3://launchwizard-example/kernel/", "SAPINST_CD_LOAD": "s3://launchwizard-example/exports/nw-752/", "SAPINST_CD_RDBMS": "s3://launchwizard-example/database/hana-20-sp07/", "SAPINST_CD_RDBMS_CLIENT": "s3://launchwizard-example/hana-client/20-11/", "SAPINST_CD_WD": "s3://launchwizard-example-us-east-1/webdisp/"}
```

Description: A list of SAP Application installation parameters formatted as stringified JSON.

You can specify any of the following values for the PRODUCT\_ID: sapNetWeaver-752

| sapNetWeaver-750 | sapNetweaverJavaOnly-750 | saps4hana-1909 | saps4hana-2020 | saps4hana-2021 | saps4hana-2022 | saps4hana-2023 | saps4hanafoundations-2021 | saps4hanafoundations-2022 | saps4hanafoundations-2023 | sapbw4hana-2.0 | sapbw4hana-2021 | sapsolman-7.2

Conditional: If you specify Yes for InstallSap, you must also provide input for this specification.

Required: No

- **SnsTopicArn**

Type: String

Example: arn:aws:sns:us-east-1:1234567890:Test-Topic

Description: The Amazon SNS topic used to receive the final deployment status from Launch Wizard.

Required: No

- **DisableDeploymentRollback**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to disable rollback of the AWS CloudFormation stack if the stack creation fails.

Required: Yes

- **SaveDeploymentArtifacts**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to save the deployment artifacts in Service Catalog after deployment is complete.

Required: Yes

- **DeploymentArtifactsS3Uri**

Type: String

Example: s3://save-test-us-east-1

Description: The Amazon S3 URI in which to save the deployment artifacts for Service Catalog.

Required: No

- **InstallSapWebDispatcher**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP Web Dispatcher.

Required: No

- **InstallWebDispatcherLoadBalancer**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to deploy a load balancer in front of SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `InstallSap` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerType**

Type: String

AllowedValues: ALB | NLB

Description: Specifies the kind of load balancer to deploy in front of SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerInternetFacing**

Type: String

AllowedValues: Yes | No

Description: Specifies whether the load balancer in front of SAP Web Dispatcher is internet-facing.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherInstanceNumber**

Type: Number

Min: 00

Max: 97

Description: The double-digit instance number for the SAP Web Dispatcher instance.

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `InstallSap` are specified as Yes.

Required: Yes

- **WebDispatcherAdminUserId**

Type: Number

Min: 100

Max: 65536

Description: The user ID number for the SAP Web Dispatcher administrator.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherSystemId**

Type: String

Description: This value must consist of 3 uppercase characters.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherVersion**

Type: String

AllowedValues: 7 . 89

Description: The SAP Web Dispatcher version to use. For more information, see [Supported versions of SAP Web Dispatcher](#).

Conditional: This specification can only be used if `InstallSapWebDispatcher` and `InstallSap` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerSecureProtocolEnabled**

Type: String

AllowedValues: Yes | No

Description: Specifies the ACM certificate to use for your load balancer's TLS/HTTPS listener.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerACMCertificateArn**

Type: String

Example:

Description: The ARN of the ACM certificate to use for your load balancer's TLS/HTTPS listener.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, `InstallWebDispatcherLoadBalancer`, and `WebDispatcherLoadBalancerSecureProtocolEnabled` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerAvailabilityZone1SubnetId**

Type: String

Example: subnet-11111111aaaaaaaa

Description: The existing private subnet where you want to deploy SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerAvailabilityZone2SubnetId**

Type: String

Example: subnet-22222222aaaaaaaa

Description: The additional existing private subnet where you want to deploy SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **WebDispatcherSecurityGroupId**

Type: String

Example:

sg-1234567890abcdef

Description: The security group to assign to your SAP Web Dispatcher nodes.

Conditional: This specification can only be used if `InstallSapWebDispatcher` is specified as Yes.

Required: Yes

- **WebDispatcherLoadBalancerSecurityGroupId**

Type: String

Example: sg-1234567890abcdef

Description: The security group to assign to the load balancer for SAP Web Dispatcher nodes.



Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, and `InstallWebDispatcherLoadBalancer` are specified as Yes.

Required: Yes

- **NewWebDispatcherSecurityGroupName**

Type: String

Example:

Description: The name of the security group to create for SAP Web Dispatcher.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, `InstallWebDispatcherLoadBalancer`, and `CreateSecurityGroup` are specified as Yes.

Required: Yes

- **WebDispatcherNewLoadBalancerSecurityGroupName**

Type: String

Example:

Description: The name of the security group to create for the load balancer for SAP Web Dispatcher.

Conditional: This specification can only be used if `InstallSapWebDispatcher`, `InstallSap`, `InstallWebDispatcherLoadBalancer`, and `CreateSecurityGroup` are specified as Yes.

Required: Yes

## SapNWOnAseSingle

The following is an example of the specifications required to create a single-node deployment with SAP software installed:

```
{
  "applicationName": "ExampleApp",
  "DisableDeploymentRollback": "Yes",
  "SaveDeploymentArtifacts": "Yes",
  "DeploymentArtifactsS3Uri": "s3://launchwizardsoftware",
```

```

"KeyPairName": "ExampleKeyPair",
"VpcId": "vpc-01abcde1234567891",
"Timezone": "UTC",
"EnableEbsVolumeEncryption": "Yes",
"EbsKmsKeyArn": "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
"DatabaseDataVolumeType": "io1",
"DatabaseLogVolumeType": "io1",
"DatabaseBackupVolumeType": "gp2",
"SapSid": "ECD",
"SybSidUserId": "1003",
"SidAdmUserId": "5000",
"SapPassword": "EXAMPLE-PASSWORD",
"ApplicationDataVolumeType": "gp3",
"SetupTransportDomainController": "Yes",
"CreateTransportDomainControllerFileSystem": "Yes",
"AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
"CentralSystemOperatingSystem": "SuSE-Linux-15-SP5-For-SAP-HVM",
"CentralSystemAmiId": "ami-1234567890abcdef0",
"CentralSystemInstanceType": "m6a.xlarge",
"EnableCloudwatchLogs": "Yes",
"Ec2InstanceRoleName": "AmazonEC2RoleForLaunchWizard",
"CentralSystemHostname": "sapci",
"CentralSystemVirtualHostname": "sapvirtualci",
"CentralSystemAutomaticRecovery": "Yes",
"AseBackupFilesSpecifications": "[{"fileSize":300,"IOPS":900,"throughPut":250}]",
"AseAbapDataFilesSpecifications": "[{"fileSize":300,"IOPS":3000,"throughPut":250}]",
"AseAbapLogFilesSpecifications": "[{"fileSize":300,"IOPS":3000,"throughPut":250}]",
"SapInstallationSpecifications": [{"parameters":{"PRODUCT_ID":"sapNetweaver-752","CI_INSTANCE_NR":"12","ASCS_INSTANCE_NR":"10","SAPINST_CD_RDBMS":"s3://launchwizardsoftware/database/ase","SAPINST_CD_SWPM":"s3://launchwizardsoftware/swpm/10-sp38","SAPINST_CD_SAPCAR":"s3://launchwizardsoftware/sapcar/SAPCAR_1320-80000935.EXE","SAPINST_CD_KERNEL":"s3://launchwizardsoftware/kernel/753/ase","SAPINST_CD_LOAD":"s3://launchwizardsoftware/exports/nw-752"}}],
"CreateSecurityGroup": "Yes",
"NewDatabaseSecurityGroupName": "example1212_DB_Sec_grp",
"NewApplicationSecurityGroupName": "example1212_App_Sec_grp",
"NewSecurityGroupRules": [{"type":"ip","value":"203.0.113.5/32"}],
"SapSysGroupId": "1001",
"SapVirtualIPOptIn": "Yes",

```

```

"ConfigurationScripts": "{\"preConfigurationScripts\":{\"onFailureBehaviour\": \"CONTINUE\"}, \"configurationScripts\": [], \"postConfigurationScripts\": {\"onFailureBehaviour\": \"CONTINUE\"}, \"configurationScripts\": []}}",
  "InstallSap": "Yes"
}

```

The following is an example of the specifications required to create a single-node deployment with only infrastructure resources:

```

{
  "applicationName": "ExampleApp2",
  "DisableDeploymentRollback": "Yes",
  "SaveDeploymentArtifacts": "No",
  "KeyPairName": "ExampleKeyPair",
  "VpcId": "vpc-01abcde1234567891",
  "Timezone": "UTC",
  "EnableEbsVolumeEncryption": "Yes",
  "EbsKmsKeyArn": "arn:aws:kms:us-east-1:111122223333:alias/aws/ebs",
  "DatabaseDataVolumeType": "io2",
  "DatabaseLogVolumeType": "io2",
  "DatabaseBackupVolumeType": "io2",
  "SapSid": "ECD",
  "SybSidUserId": "1003",
  "SidAdmUserId": "5000",
  "ApplicationDataVolumeType": "gp3",
  "SetupTransportDomainController": "No",
  "AvailabilityZone1PrivateSubnet1Id": "subnet-11111111aaaaaaaa",
  "CentralSystemOperatingSystem": "Red-Hat-Enterprise-Linux-9.0-For-SAP-HA-US-HVM",
  "CentralSystemAmiId": "ami-1234567890abcdef0",
  "CentralSystemInstanceType": "m5.4xlarge",
  "EnableCloudwatchLogs": "Yes",
  "Ec2InstanceRoleName": "AmazonEC2RoleForLaunchWizard",
  "CentralSystemHostname": "sapci",
  "CentralSystemVirtualHostname": "sapvirtualci",
  "CentralSystemAutomaticRecovery": "Yes",
  "AseBackupFilesSpecifications": "[{\"fileSize\":300,\"IOPS\":900,\"throughPut\":250}]",
  "AseAbapDataFilesSpecifications": "[{\"fileSize\":300,\"IOPS\":3000,\"throughPut\":250}]",
  "AseAbapLogFilesSpecifications": "[{\"fileSize\":300,\"IOPS\":3000,\"throughPut\":250}]",
  "SapInstallationSpecifications": "{\"parameters\":{\"PRODUCT_ID\": \"sapNetweaver-752\", \"CI_INSTANCE_NR\": \"12\", \"ASCS_INSTANCE_NR\": \"10\"}}",

```

```
"CreateSecurityGroup": "No",
"DatabaseSecurityGroupId": "sg-1234567890abcdef0",
"ApplicationSecurityGroupId": "sg-021345abcdef6789",
"SapSysGroupId": "2001",
"SapVirtualIPOptIn": "Yes",
"ConfigurationScripts": "{\"preConfigurationScripts\":{\"onFailureBehaviour\":"CONTINUE\"},\"configurationScripts\":[],\"postConfigurationScripts\":{\"onFailureBehaviour\":"CONTINUE\"},\"configurationScripts\":[]}",
"InstallSap": "No"
}
```

The following list describes each specification input:

- **DisableDeploymentRollback**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to disable rollback of the AWS CloudFormation stack if the stack creation fails.

Required: Yes

- **SaveDeploymentArtifacts**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to save the deployment artifacts in Service Catalog after deployment is complete.

Required: Yes

- **DeploymentArtifactsS3Uri**

Type: String

Example: s3://save-test-us-east-1

Description: The Amazon S3 URI in which to save the deployment artifacts for Service Catalog.

Required: No

- **KeyPairName**

Type: String

Constraints: Up to 255 ASCII characters

Example: home

Description: The name of an existing Amazon EC2 key pair. All instances will launch with this key pair.

Required: Yes

- **VpcId**

Type: String

Example: vpc-01234567890

Description: The existing Amazon VPC where you want to deploy the system.

Required: Yes

- **Timezone**

Type: String

Example: UTC

Description: The time zone to configure for your SAP resources.

Required: Yes

- **EnableEbsVolumeEncryption**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to encrypt the EBS volumes used for the deployment.

Required: Yes

- **EbsKmsKeyArn**

Type: String

Example: arn:aws:kms:us-west-2:111122223333:key/1234abcd-12ab-34cd-56ef-1234567890ab

Description: Specifies a KMS key ARN for encrypting EBS volumes when `EnableEbsVolumeEncryption` is set to Yes.

Conditional: If `EnableEbsVolumeEncryption` is Yes, you must specify a KMS key ARN.

Required: No

- **DatabaseDataVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2 | fsx

Description: The Amazon EBS volume type, or Amazon FSx for NetApp ONTAP (if supported) file share, for database data.

Conditional: If `fsx` is specified for `DatabaseDataVolumeType`, you must also specify `fsx` for `DatabaseLogVolumeType`.

Required: Yes

- **DatabaseLogVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2 | fsx

Description: The Amazon EBS volume type, or FSx for ONTAP (if supported) file share, for database logging.

Conditional: If `fsx` is specified for `DatabaseLogVolumeType`, you must also specify `fsx` for `DatabaseDataVolumeType`.

Required: Yes

- **databaseBackupVolume**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2 | fsx

Description: The Amazon EBS volume type, or Amazon FSx for NetApp ONTAP (if supported) file share, for database backup.

Required: Yes

- **SapSid**

Type: String

Constraints: This value must consist of 3 characters.

Example: HDB

Description: The SAP application system ID for installation and setup.

Required: Yes

- **SybSidUserId**

Type: String

Constraints: The minimum is 100, and the maximum is 65536.

Example: 1000

Description: The system ID user ID for SAP ASE database.

Required: Yes

- **SidAdmUserId**

Type: String

Constraints: The minimum is 100, and the maximum is 65536.

Example: 1002

Description: The UID for the <sid>adm user. The default UID is 1002.

Required: No

- **SapPassword**

Type: String

Description: Specifies the password to use for setting up the SAP application and database defaults users. The password must:

- Be between 10 and 13 alphanumeric characters.
- Not begin with a number or special character.
- Have at least one uppercase letter.
- Have at least one lowercase letter.
- Have at least one digit.
- Only use the following special characters: #, @, and \_.

Required: Yes

- **ApplicationDataVolumeType**

Type: String

AllowedValues: gp2 | gp3 | io1 | io2

Description: The Amazon EBS volume type for the SAP application.

Required: Yes

- **SetupTransportDomainController**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to use transport FS.

Required: Yes

- **CreateTransportDomainControllerFileSystem**

Type: String

AllowedValues: Yes | No

Default: No

Description: Specifies whether to create a new Amazon EFS for the transport domain controller.



Conditional: You must specify No for SetupTransportDomainController to provide value for this specification.

Required: No

- **AvailabilityZone1PrivateSubnet1Id**

Type: String

Example: subnet-11111111aaaaaaaa

Description: The existing private subnet where you want to deploy the system.

Required: Yes

- **CentralSystemOperatingSystem**

Type: String

Example: SuSE-Linux-12-SP5-For-SAP-HVM

Description: The operating system (including the version) for database.

AllowedValues: SuSE-Linux-12-SP4-HVM | SuSE-Linux-12-SP4-For-SAP-HVM | SuSE-Linux-12-SP5-HVM | SuSE-Linux-12-SP5-For-SAP-HVM | SuSE-Linux-15-HVM | SuSE-Linux-15-For-SAP-HVM | SuSE-Linux-15-SP1-HVM | SuSE-Linux-15-SP1-For-SAP-HVM | SuSE-Linux-15-SP2-HVM | SuSE-Linux-15-SP2-For-SAP-HVM | SuSE-Linux-15-SP3-HVM | SuSE-Linux-15-SP3-For-SAP-HVM | SuSE-Linux-15-SP4-HVM | SuSE-Linux-15-SP4-For-SAP-HVM | Red-Hat-Enterprise-Linux-7.6-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.7-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.9-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.1-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.2-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.4-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-8.6-For-SAP-HA-US-HVM | Red-Hat-Enterprise-Linux-7.6-BYOS | Red-Hat-Enterprise-Linux-7.7-BYOS | Red-Hat-Enterprise-Linux-8.1-BYOS | Red-Hat-Enterprise-Linux-8.2-BYOS | Red-Hat-Enterprise-Linux-8.4-BYOS | Red-Hat-Enterprise-Linux-8.6-BYOS | SuSE-Linux-12-SP4-For-SAP-BYOS-HVM | SuSE-Linux-12-SP5-For-SAP-BYOS-HVM | SuSE-Linux-15-For-SAP-BYOS-HVM | SuSE-Linux-15-SP1-For-SAP-BYOS-HVM | SuSE-Linux-15-SP2-For-

SAP-BYOS-HVM | SuSE-Linux-15-SP3-For-SAP-BYOS-HVM | SuSE-Linux-15-SP4-For-SAP-BYOS-HVM

Required: Yes

- **CentralSystemAmiId**

Type: String

Example: ami-1111111111111111

Description: The AMI ID to use for the database nodes. The AMI can be provided by Amazon, sourced from AWS Marketplace, or with Bring your own images (BYOI). If the AMI from AWS Marketplace is using the Bring Your Own Subscription model (BYOS), you must provide the registration code for SUSE distributions or an account and password for RHEL distributions.

Required: Yes

- **CentralSystemInstanceType**

Type: String

Example: r5.2xlarge

Description: The instance type used for database nodes.

Required: Yes

- **EnableCloudwatchLogs**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to enable Amazon CloudWatch logs.

Required: No

- **EC2InstanceRoleName**

Type: String

Example: AmazonEC2RoleForLaunchWizard

---

Description: The name of the Amazon EC2 instance role.

Required: Yes

- **CentralSystemHostname**

Type: String

Example: sapci

Description: The host name or DNS short name to use for the primary database node.

Required: Yes

- **CentralSystemVirtualHostname**

Type: String

Example: sapvirtualci

Description: The virtual host name or DNS short name to use for the primary database node.

Required: Yes

- **CentralSystemAutomaticRecovery**

Type: String

AllowedValues: Yes | No

Description: Specify Yes to enable Amazon CloudWatch action based recovery for database nodes or No to keep it disabled. For HA deployments, set this value to No as the cluster will manage availability for the nodes.

Required: Yes

- **AseBackupFileSpecifications**

Type: String

Example: [{"fileSize":300,"IOPS":900,"throughPut":250}]

Description: Parameters for the backup filesystem for SAP ASE database formatted as stringified JSON.

Required: Yes

- **AseAbapDataFilesSpecifications**

Type: String

Example: [{"fileSize":300,"IOPS":3000,"throughPut":250}]

Description: Parameters for the data filesystem for SAP ASE database formatted as stringified JSON.

Required: Yes

- **AseAbapLogFilesSpecifications**

Type: String

Example: [{"fileSize":300,"IOPS":3000,"throughPut":250}]

Description: Parameters for the log filesystem for SAP ASE database formatted as stringified JSON.

Required: Yes

- **SapInstallationSpecifications**

Type: String

Example: {"parameters":

```
{
  "PRODUCT_ID": "saps4hana-2022",
  "HDB_SCHEMA_NAME": "SAPABAP1",
  "CI_INSTANCE_NR": "1",
  "launchwizard-test-sap-media/sapcar",
  "SAPINST_CD_SWPM": "s3://launchwizard-test-sap-media/swpm/10-sp30",
  "SAPINST_CD_KERNEL": "s3://launchwizard-test-sap-media/kernel",
  "SAPINST_CD_LOAD": "s3://launchwizard-test-sap-media/exports/nw-75",
  "SAPINST_CD_RDBMS": "s3://launchwizard-test-sap-media/database",
  "SAPINST_CD_RDBMS_CLIENT": "s3://launchwizard-test-sap-media/hana-client"},
  "onFailureBehaviour": "CONTINUE/ROLLBACK"}
```

Description: A list of SAP Application installation parameters formatted as stringified JSON.

You can specify any of the following values for the PRODUCT\_ID: sapNetWeaver-752

| sapNetWeaver-750 | sapNetweaverJavaOnly-750 | saps4hana-1909 |  
saps4hana-2020 | saps4hana-2021 | saps4hana-2022 | saps4hana-2023  
| saps4hanafoundations-2021 | saps4hanafoundations-2022 |  
saps4hanafoundations-2023 | sapbw4hana-2.0 | sapbw4hana-2021 |  
sapsolman-7.2

Conditional: If you specify Yes for `InstallSap`, you must also provide input for this specification.

Required: No

- **CreateSecurityGroup**

Type: String

AllowedValues: Yes | No

Description: Specifies whether you want to create new security groups for the deployment.

Required: Yes

- **DatabaseSecurityGroupId**

Type: String

Example: sg-1234567890abcdef

Description: The security group ID for your HANA database.

Conditional: If you specify No for `CreateSecurityGroup`, you must provide an input for this configuration.

Required: No

- **ApplicationSecurityGroupId**

Type: String

Example: sg-1234567890ghijkl

Description: The security group ID for your SAP application.

Conditional: If you specify No for `CreateSecurityGroup`, you must provide an input for this configuration.

Required: No

- **NewDatabaseSecurityGroupName**

Type: String

Example: dbsgname

Description: The name of the database tier security group.

Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **NewApplicationSecurityGroupName**

Type: String

Example: dbsgname

Description: The name of the application tier security group.

Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **NewSecurityGroupRules**

Type: String

Example: "[{"type": "ip", "value": "10.0.0/32"}, {"type": "securityGroupId", "value": "sg-0e1c107d640209244"}]"

Description: A list of CIDR blocks or Security Group IDs to be used for creating a new security group.

Conditional: If you specify Yes for `CreateSecurityGroup`, you must also provide input for this configuration.

Required: No

- **SapSysGroupId**

Type: String

Example: 1001

Description: GID for the sapsys group. The default GID is 1001.

Required: Yes

- **SapVirtualIPOptIn**

Type: String

AllowedValues: Yes | No

Description: Specifies if or not a virtual IP address is assigned to the EC2 instance hosting the SAP system.

Required: No

- **ConfigurationScripts**

Type: String

Example: {"preConfigurationScripts": {"onFailureBehaviour": "CONTINUE", "configurationScripts": [{"nodeTypesToRunScriptFor": ["DB"], "s3URL": "s3://launchwizard-scripts-preconfig-us-west-2/preconfig-install.sh", "sequence": "0"}]}, "postConfigurationScripts": {"onFailureBehaviour": "CONTINUE", "configurationScripts": [{"nodeTypesToRunScriptFor": ["DB"], "s3URL": "s3://launchwizard-scripts-postconfig-us-west-2/postconfig-install.sh", "sequence": "0"}]}}

Description: A list of pre- and post-configuration deployment scripts formatted as stringified JSON. You can specify one or more pre- or post-configuration scripts separately, or together. You must provide the follow details for each script:

- The URL for the script that has been uploaded to Amazon S3.
- A sequence number which specifies the order of execution.
- The type of node to run the script on. You can only specify DB for this deployment.
- The behavior to use should a failure or timeout occur when running the script. You can specify CONTINUE to proceed with the deployment or ROLLBACK to cancel the deployment.

Required: No

- **InstallSap**

Type: String

AllowedValues: Yes | No

Description: Specifies whether to install SAP. The following specification combinations can be used to customize your application:

- To install SAP application software, specify No for `InstallDatabaseSoftware` and Yes for `InstallSap`.
- To install only the database software and deploy infrastructure resources for the application and database components, specify Yes for `InstallDatabaseSoftware` and No for `InstallSap`.
- To only deploy infrastructure resources for the SAP application and database components, specify No for `InstallDatabaseSoftware` and `InstallSap`.

Required: Yes



# Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see [Signing AWS API requests](#) in the *IAM User Guide*.

## Action

The action to be performed.

Type: string

Required: Yes

## Version

The API version that the request is written for, expressed in the format YYYY-MM-DD.

Type: string

Required: Yes

## X-Amz-Algorithm

The hash algorithm that you used to create the request signature.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Valid Values: AWS4-HMAC-SHA256

Required: Conditional

## X-Amz-Credential

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4\_request"). The value is expressed in the following format: *access\_key/YYYYMMDD/region/service/aws4\_request*.

For more information, see [Create a signed AWS API request](#) in the *IAM User Guide*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

### **X-Amz-Date**

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'T'HHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value: 20120325T120000Z.

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see [Elements of an AWS API request signature](#) in the *IAM User Guide*.

Type: string

Required: Conditional

### **X-Amz-Security-Token**

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS STS, see [AWS services that work with IAM](#) in the *IAM User Guide*.

Condition: If you're using temporary security credentials from AWS STS, you must include the security token.

Type: string

Required: Conditional

### **X-Amz-Signature**

Specifies the hex-encoded signature that was calculated from the string to sign and the derived signing key.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

### **X-Amz-SignedHeaders**

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see [Create a signed AWS API request](#) in the *IAM User Guide*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

# Common Errors

This section lists the errors common to the API actions of all AWS services. For errors specific to an API action for this service, see the topic for that API action.

## **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 403

## **ExpiredTokenException**

The security token included in the request is expired

HTTP Status Code: 403

## **IncompleteSignature**

The request signature does not conform to AWS standards.

HTTP Status Code: 403

## **InternalFailure**

The request processing has failed because of an unknown error, exception or failure.

HTTP Status Code: 500

## **MalformedHttpRequestException**

Problems with the request at the HTTP level, e.g. we can't decompress the body according to the decompression algorithm specified by the content-encoding.

HTTP Status Code: 400

## **NotAuthorized**

You do not have permission to perform this action.

HTTP Status Code: 401

## **OptInRequired**

The AWS access key ID needs a subscription for the service.

HTTP Status Code: 403

### **RequestAbortedException**

Convenient exception that can be used when a request is aborted before a reply is sent back (e.g. client closed connection).

HTTP Status Code: 400

### **RequestEntityTooLargeException**

Problems with the request at the HTTP level. The request entity is too large.

HTTP Status Code: 413

### **RequestExpired**

The request reached the service more than 15 minutes after the date stamp on the request or more than 15 minutes after the request expiration date (such as for pre-signed URLs), or the date stamp on the request is more than 15 minutes in the future.

HTTP Status Code: 400

### **RequestTimeoutException**

Problems with the request at the HTTP level. Reading the Request timed out.

HTTP Status Code: 408

### **ServiceUnavailable**

The request has failed due to a temporary failure of the server.

HTTP Status Code: 503

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

### **UnrecognizedClientException**

The X.509 certificate or AWS access key ID provided does not exist in our records.

HTTP Status Code: 403

**UnknownOperationException**

The action or operation requested is invalid. Verify that the action is typed correctly.

HTTP Status Code: 404

**ValidationError**

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400