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"nbformat_minor": 0,
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},
"kernelspec": {
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"display_name": "Python 3"
},
"language_info": {
"name": "python"
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}
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"outputId": "ca482e7f-8c00-474a-8197-3ecfa0e68ca3"
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"outputs": [

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 34
"Collecting watson-machine-learning-client\n",
 35
" Downloading watson_machine_learning_client-1.0.391-py3-none-any.whl (538 kB)\n",
 36
"\u001b[K |████████████████████████████████| 538 kB 12.3 MB/s \n",
 37
"\u001b[?25hRequirement already satisfied: tqdm in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (4.64.1)\n",
 38
"Requirement already satisfied: requests in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (2.23.0)\n",
 39
"Requirement already satisfied: urllib3 in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (1.24.3)\n",
 40
"Requirement already satisfied: pandas in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (1.3.5)\n",
 41
"Requirement already satisfied: certifi in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (2022.9.24)\n",
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"Collecting ibm-cos-sdk\n",

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"\u001b[K |████████████████████████████████| 55 kB 4.2 MB/s \n",

"\u001b[?25hCollecting lomond\n",

" Downloading lomond-0.3.3-py2.py3-none-any.whl (35 kB)\n",

"Collecting boto3\n",

" Downloading boto3-1.26.7-py3-none-any.whl (132 kB)\n",

"\u001b[K |████████████████████████████████| 132 kB 61.1 MB/s \n",

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"\u001b[K |████████████████████████████████| 9.9 MB 57.9 MB/s \n",

"\u001b[?25hCollecting s3transfer<0.7.0,>=0.6.0\n",

" Downloading s3transfer-0.6.0-py3-none-any.whl (79 kB)\n",

56

"\u001b[K |████████████████████████████████| 79 kB 7.1 MB/s \n",

57

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58

" Downloading jmespath-1.0.1-py3-none-any.whl (20 kB)\n",

59

"Collecting urllib3\n",

60

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61

"\u001b[K |████████████████████████████████| 140 kB 82.1 MB/s \n",

62

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63

"Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.7/dist-packages (from python-dateutil<3.0.0,>=2.1->botocore<1.30.0,>=1.29.7->boto3->watson-machine-learning-client) (1.15.0)\n",

64

"Collecting ibm-cos-sdk-core==2.12.0\n",

65

" Downloading ibm-cos-sdk-core-2.12.0.tar.gz (956 kB)\n",

66

"\u001b[K |████████████████████████████████| 956 kB 64.0 MB/s \n",

67

"\u001b[?25hCollecting ibm-cos-sdk-s3transfer==2.12.0\n",

68

" Downloading ibm-cos-sdk-s3transfer-2.12.0.tar.gz (135 kB)\n",

```
69
"\u001b[K |████████████████████████████████| 135 kB 58.9 MB/s \n",
70
"\u001b[?25hCollecting jmespath<2.0.0,>=0.7.1\n",
71
" Downloading jmespath-0.10.0-py2.py3-none-any.whl (24 kB)\n",
72
"Collecting requests\n",
73
" Downloading requests-2.28.1-py3-none-any.whl (62 kB)\n",
74
"\u001b[K |████████████████████████████████| 62 kB 1.2 MB/s \n",
75
"\u001b[?25hRequirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.7/dist-packages (from requests->watson-machine-learning-client) (2.10)\n",
76
"Requirement already satisfied: charset-normalizer<3,>=2 in /usr/local/lib/python3.7/dist-packages (from requests->watson-machine-learning-client) (2.1.1)\n",
77
"Requirement already satisfied: numpy>=1.17.3 in /usr/local/lib/python3.7/dist-packages (from pandas->watson-machine-learning-client) (1.21.6)\n",
78
"Requirement already satisfied: pytz>=2017.3 in /usr/local/lib/python3.7/dist-packages (from pandas->watson-machine-learning-client) (2022.6)\n",
79
"Building wheels for collected packages: ibm-cos-sdk, ibm-cos-sdk-core, ibm-cos-sdk-s3transfer\n",
80
" Building wheel for ibm-cos-sdk (setup.py) ... \u001b[?25l\u001b[?25hdone\n",
81
```

" Created wheel for ibm-cos-sdk: filename=ibm_cos_sdk-2.12.0-py3-none-any.whl size=73931 sha256=7bb6d15b2a608d3d4657e6b5ba98f74ab002a084e180020f3a1f0213cba0bf37\n",

82

" Stored in directory: /root/.cache/pip/wheels/ec/94/29/2b57327cf00664b6614304f7958abd29d77ea0e5bbece2ea57\n",

83

" Building wheel for ibm-cos-sdk-core (setup.py) ... \u001b[?25l\u001b[?25hdone\n",

84

" Created wheel for ibm-cos-sdk-core: filename=ibm_cos_sdk_core-2.12.0-py3-none-any.whl size=562962 sha256=1ee48cb7c85b75e505b11fca14d7dece0ff88d8c6ed47d5d893a61e8a8e5fe94\n",

85

" Stored in directory: /root/.cache/pip/wheels/64/56/fb/5cd6f4f40406c828a5289b95b2752a4d142a9afb359244ed8d\n",

86

" Building wheel for ibm-cos-sdk-s3transfer (setup.py) ... \u001b[?25l\u001b[?25hdone\n",

87

" Created wheel for ibm-cos-sdk-s3transfer: filename=ibm_cos_sdk_s3transfer-2.12.0-py3-none-any.whl size=89778 sha256=706652096c1249f97be1d9ec1bfcafcc3224e10007fcba01a94bcf227043ab5f\n",

88

" Stored in directory: /root/.cache/pip/wheels/57/79/6a/ffe3370ed7ebc00604f9f76766e1e0348dcdcad2b2e32df9e1\n",

89

"Successfully built ibm-cos-sdk ibm-cos-sdk-core ibm-cos-sdk-s3transfer\n",

90

"Installing collected packages: urllib3, requests, jmespath, ibm-cos-sdk-core, botocore, s3transfer, ibm-cos-sdk-s3transfer, lomond, ibm-cos-sdk, boto3, watson-machine-learning-client\n",

91

" Attempting uninstall: urllib3\n",

92

" Found existing installation: urllib3 1.24.3\n",

93

" Uninstalling urllib3-1.24.3:\n",

```
" Successfully uninstalled urllib3-1.24.3\n",
" Attempting uninstall: requests\n",
" Found existing installation: requests 2.23.0\n",
" Uninstalling requests-2.23.0:\n",
" Successfully uninstalled requests-2.23.0\n",
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]
},
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 ],
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  },
  "id": "q5fp6_S9dADL",
  "outputId": "a9548eb4-fb1a-4186-b542-8c6ae8d0c338"
 },
 "execution_count": 2,
 "outputs": [
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 122
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 123
"name": "stdout",
 124
"text": [
 125
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 126
"Collecting ibm_watson_machine_learning\n",
 127
" Downloading ibm_watson_machine_learning-1.0.257-py3-none-any.whl (1.8 MB)\n",
 128
"\u001b[K |████████████████████████████████| 1.8 MB 12.5 MB/s \n",
 129
"\u001b[?25hRequirement already satisfied: lomond in /usr/local/lib/python3.7/dist-packages (from
ibm_watson_machine_learning) (0.3.3)\n",
 130
"Requirement already satisfied: tabulate in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning)
(0.8.10)\n",
 131
"Requirement already satisfied: pandas<1.5.0,>=0.24.2 in /usr/local/lib/python3.7/dist-packages (from
ibm_watson_machine_learning) (1.3.5)\n",
 132
"Requirement already satisfied: certifi in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning)
(2022.9.24)\n",
 133
"Requirement already satisfied: packaging in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning)
(21.3)\n",
```

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134
"Requirement already satisfied: importlib-metadata in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning) (4.13.0)\n",
135
"Requirement already satisfied: urllib3 in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning) (1.26.12)\n",
136
"Requirement already satisfied: requests in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning) (2.28.1)\n",
137
"Collecting ibm-cos-sdk==2.7.*\n",
138
" Downloading ibm-cos-sdk-2.7.0.tar.gz (51 kB)\n",
139
"\u001b[K |████████████████████████████████| 51 kB 562 kB/s \n",
140
"\u001b[?25hCollecting ibm-cos-sdk-core==2.7.0\n",
141
" Downloading ibm-cos-sdk-core-2.7.0.tar.gz (824 kB)\n",
142
"\u001b[K |████████████████████████████████| 824 kB 47.4 MB/s \n",
143
"\u001b[?25hCollecting ibm-cos-sdk-s3transfer==2.7.0\n",
144
" Downloading ibm-cos-sdk-s3transfer-2.7.0.tar.gz (133 kB)\n",
145
"\u001b[K |████████████████████████████████| 133 kB 72.5 MB/s \n",
146
```

"\u001b[?25hRequirement already satisfied: jmespath<1.0.0,>=0.7.1 in /usr/local/lib/python3.7/dist-packages (from ibm-cos-sdk==2.7.*->ibm_watson_machine_learning) (0.10.0)\n",

147

"Collecting docutils<0.16,>=0.10\n",

148

" Downloading docutils-0.15.2-py3-none-any.whl (547 kB)\n",

149

"\u001b[K |████████████████████████████████| 547 kB 72.5 MB/s \n",

150

"\u001b[?25hRequirement already satisfied: python-dateutil<3.0.0,>=2.1 in /usr/local/lib/python3.7/dist-packages (from ibm-cos-sdk-core==2.7.0->ibm-cos-sdk==2.7.*->ibm_watson_machine_learning) (2.8.2)\n",

151

"Requirement already satisfied: pytz>=2017.3 in /usr/local/lib/python3.7/dist-packages (from pandas<1.5.0,>=0.24.2->ibm_watson_machine_learning) (2022.6)\n",

152

"Requirement already satisfied: numpy>=1.17.3 in /usr/local/lib/python3.7/dist-packages (from pandas<1.5.0,>=0.24.2->ibm_watson_machine_learning) (1.21.6)\n",

153

"Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.7/dist-packages (from python-dateutil<3.0.0,>=2.1->ibm-cos-sdk-core==2.7.0->ibm-cos-sdk==2.7.*->ibm_watson_machine_learning) (1.15.0)\n",

154

"Requirement already satisfied: charset-normalizer<3,>=2 in /usr/local/lib/python3.7/dist-packages (from requests->ibm_watson_machine_learning) (2.1.1)\n",

155

"Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.7/dist-packages (from requests->ibm_watson_machine_learning) (2.10)\n",

156

"Requirement already satisfied: zipp>=0.5 in /usr/local/lib/python3.7/dist-packages (from importlib-metadata->ibm_watson_machine_learning) (3.10.0)\n",

157

"Requirement already satisfied: typing-extensions>=3.6.4 in /usr/local/lib/python3.7/dist-packages (from importlib-metadata->ibm_watson_machine_learning) (4.1.1)\n",

158

"Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in /usr/local/lib/python3.7/dist-packages (from packaging->ibm_watson_machine_learning) (3.0.9)\n",

159

"Building wheels for collected packages: ibm-cos-sdk, ibm-cos-sdk-core, ibm-cos-sdk-s3transfer\n",

160

" Building wheel for ibm-cos-sdk (setup.py) ... \u001b[?25l\u001b[?25hdone\n",

161

" Created wheel for ibm-cos-sdk: filename=ibm_cos_sdk-2.7.0-py2.py3-none-any.whl size=72563 sha256=82b87c6ecc3373656ab6f3022e47f1184a879f9604adece00255929c0f0ac90d\n",

162

" Stored in directory: /root/.cache/pip/wheels/47/22/bf/e1154ff0f5de93cc477acd0ca69abfbb8b799c5b28a66b44c2\n",

163

" Building wheel for ibm-cos-sdk-core (setup.py) ... \u001b[?25l\u001b[?25hdone\n",

164

" Created wheel for ibm-cos-sdk-core: filename=ibm_cos_sdk_core-2.7.0-py2.py3-none-any.whl size=501013 sha256=ab7a7e33ae17a0db11e44a904b9ab2a8d088491f1149868eb4d1e7ba0f4a32de\n",

165

" Stored in directory: /root/.cache/pip/wheels/6c/a2/e4/c16d02f809a3ea998e17cfd02c13369281f3d232aaf5902c19\n",

166

" Building wheel for ibm-cos-sdk-s3transfer (setup.py) ... \u001b[?25l\u001b[?25hdone\n",

167

" Created wheel for ibm-cos-sdk-s3transfer: filename=ibm_cos_sdk_s3transfer-2.7.0-py2.py3-none-any.whl size=88622 sha256=e6e47f580ebf120cd0d496be94e8c6c5d4576a34da3be86eb6dfe2c2ec51634d\n",

168

" Stored in directory: /root/.cache/pip/wheels/5f/b7/14/fbe02bc1ef1af890650c7e51743d1c83890852e598d164b9da\n",

169

"Successfully built ibm-cos-sdk ibm-cos-sdk-core ibm-cos-sdk-s3transfer\n",

```
170
"Installing collected packages: docutils, ibm-cos-sdk-core, ibm-cos-sdk-s3transfer, ibm-cos-sdk, ibm-watson-machine-learning\n",
171
" Attempting uninstall: docutils\n",
172
" Found existing installation: docutils 0.17.1\n",
173
" Uninstalling docutils-0.17.1:\n",
174
" Successfully uninstalled docutils-0.17.1\n",
175
" Attempting uninstall: ibm-cos-sdk-core\n",
176
" Found existing installation: ibm-cos-sdk-core 2.12.0\n",
177
" Uninstalling ibm-cos-sdk-core-2.12.0:\n",
178
" Successfully uninstalled ibm-cos-sdk-core-2.12.0\n",
179
" Attempting uninstall: ibm-cos-sdk-s3transfer\n",
180
" Found existing installation: ibm-cos-sdk-s3transfer 2.12.0\n",
181
" Uninstalling ibm-cos-sdk-s3transfer-2.12.0:\n",
182
" Successfully uninstalled ibm-cos-sdk-s3transfer-2.12.0\n",
183
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" Attempting uninstall: ibm-cos-sdk\n",

" Found existing installation: ibm-cos-sdk 2.12.0\n",

" Uninstalling ibm-cos-sdk-2.12.0:\n",

" Successfully uninstalled ibm-cos-sdk-2.12.0\n",

"Successfully installed docutils-0.15.2 ibm-cos-sdk-2.7.0 ibm-cos-sdk-core-2.7.0 ibm-cos-sdk-s3transfer-2.7.0 ibm-watson-machine-learning-1.0.257\n"

]

}

]

},

{

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"from ibm_watson_machine_learning import APIClient\n",

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" 'url':'https://eu-gb.ml.cloud.ibm.com',\n",
" 'apikey':\"IPJI2muoiEQuiCN8SlAVWhibUleKXXfaBLhsV1BqG13F\"\n",
"}\n",
"Client = APIClient(credentials)"
],
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"outputId": "cbfe7d67-9989-4cc0-dc51-ca41d43ed75e"
},
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{
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"name": "stdout",
"text": [
"Python 3.7 and 3.8 frameworks are deprecated and will be removed in a future release. Use Python 3.9 framework instead.\n"
]
}
]
},
{
"cell_type": "code",
"source": [
"Client"
```

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],
"metadata": {
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},
"id": "bsnhmFULdqOR",
"outputId": "7d9e0789-ff58-41b0-c3d2-54ac4a5324c0"
},
"execution_count": 4,
"outputs": [
{
"output_type": "execute_result",
"data": {
"text/plain": [
```

```
239
"<ibm_watson_machine_learning.client.APIClient at 0x7f98149ba850>"
240
]
241
},
242
"metadata": {},
243
"execution_count": 4
244
}
245
]
246
},
247
{
248
"cell_type": "code",
249
"source": [
250
"Client.spaces.get_details()"
251
],
252
"metadata": {
```

```
"colab": {
"base_uri": "https://localhost:8080/"
},
"id": "_3hE43FGdtOe",
"outputId": "add212d0-b19d-4e18-a0c5-d2c35719c1b3"
},
"execution_count": 5,
"outputs": [
{
"output_type": "execute_result",
"data": {
"text/plain": [
"{'resources': [{'entity': {'compute': [{'crn': 'crn:v1:bluemix:public:pm-20:eu-gb:a/942b74057f4f4693a5063e53a1998c0a:fd4c34ac-8fb8-4091-803e-702fd69e7268::',\n",
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" 'guid': 'fd4c34ac-8fb8-4091-803e-702fd69e7268',\n",
" 'name': 'Watson Machine Learning-np',\n",
" 'type': 'machine_learning'}],\n",
" 'description': '',\n",
" 'name': 'FFD_DEPLOYMENT',\n",
" 'scope': {'bss_account_id': '942b74057f4f4693a5063e53a1998c0a'},\n",
" 'stage': {'production': False},\n",
" 'status': {'state': 'active'},\n",
" 'storage': {'properties': {'bucket_name': '40eacea5-8669-4880-9cfa-020f7b937fd4',\n",
" 'bucket_region': 'eu-gb-standard',\n",
" 'credentials': {'admin': {'access_key_id': '58823ca22e35459f9ed23e5b64c52395',\n",
" 'api_key': 'sVpdNRV_kFC_io-UFrygUfCvKG73HUFzg6klpZTdATir',\n",
" 'secret_access_key': '7a4d123516809989ff6335da34b75262f8d1b2720b1e3993',\n",
" 'service_id': 'ServiceId-487cda5f-c257-41ec-91b1-3676d0a722ec'},\n",

" 'editor': {'access_key_id': '11c6512f22854163bdaeeaad7c6e634f',\n",

281

" 'api_key': 'GEk5XKTAgI4ksFK3rCYNOdoOrITNeeZ9PAgU_hnADMc0',\n",

282

" 'resource_key_crn': 'crn:v1:bluemix:public:cloud-object-storage:global:a/942b74057f4f4693a5063e53a1998c0a:b78a8b79-a65e-42a3-ac79-d321809c7229::',\n",

283

" 'secret_access_key': 'c2da1f5c3c59a1dd9281f5f70452054b9ee9ed51ada007a9',\n",

284

" 'service_id': 'ServiceId-c50c41ba-8112-4602-bd81-898d2c342031'},\n",

285

" 'viewer': {'access_key_id': 'ffc7eb706a6a41b886114b0a6a379f9b',\n",

286

" 'api_key': '7TwTkdvDMxsOLwSrclwGYq-hVjQPQisRmfb32p46tykQ',\n",

287

" 'resource_key_crn': 'crn:v1:bluemix:public:cloud-object-storage:global:a/942b74057f4f4693a5063e53a1998c0a:b78a8b79-a65e-42a3-ac79-d321809c7229::',\n",

288

" 'secret_access_key': '6c0bccf003e873a5537a320adef6e931cfadc716784354af',\n",

289

" 'service_id': 'ServiceId-bde18ae1-9a35-4d2a-aeee-874fcb6c31d1'}},\n",

290

" 'endpoint_url': 'https://s3.eu-gb.cloud-object-storage.appdomain.cloud',\n",

291

" 'guid': 'b78a8b79-a65e-42a3-ac79-d321809c7229',\n",

292

" 'resource_crn': 'crn:v1:bluemix:public:cloud-object-storage:global:a/942b74057f4f4693a5063e53a1998c0a:b78a8b79-a65e-42a3-ac79-d321809c7229::'},\n",

293

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" 'type': 'bmcos_object_storage'}},\n",
" 'metadata': {'created_at': '2022-11-11T20:38:20.212Z',\n",
" 'creator_id': 'IBMid-66100457F5',\n",
" 'id': '54f66e28-7d03-4808-8e64-b0c3b4826004',\n",
" 'updated_at': '2022-11-11T20:38:37.758Z',\n",
" 'url': '/v2/spaces/54f66e28-7d03-4808-8e64-b0c3b4826004'}}]}"
]
},
"metadata": {},
"execution_count": 5
}
]
},
{
```

```
"cell_type": "code",
"source": [
"Client.spaces.list()"
],
"metadata": {
"colab": {
"base_uri": "https://localhost:8080/"
},
"id": "0g-rJBFKdvGU",
"outputId": "a4c60f8d-6e58-49c2-813d-7b28ef346d8d"
},
"execution_count": 6,
"outputs": [
{
```

"output_type": "stream",

"name": "stdout",

"text": [

"Note: 'limit' is not provided. Only first 50 records will be displayed if the number of records exceed 50\n",

"------------------------------------ -------------- ------------------------\n",

"ID NAME CREATED\n",

"54f66e28-7d03-4808-8e64-b0c3b4826004 FFD_DEPLOYMENT 2022-11-11T20:38:20.212Z\n",

"------------------------------------ -------------- ------------------------\n"

]

}

]

},

{

"cell_type": "code",

"source": [
"space_uid = '54f66e28-7d03-4808-8e64-b0c3b4826004' #Space User ID\n",
"space_uid"
],
"metadata": {
"colab": {
"base_uri": "https://localhost:8080/",
"height": 36
},
"id": "RyG9obB6dzZI",
"outputId": "8a6155c8-b584-4ada-c2f1-d7747afd4b18"
},
"execution_count": 7,
"outputs": [

```
{
"output_type": "execute_result",
"data": {
"text/plain": [
"'54f66e28-7d03-4808-8e64-b0c3b4826004'"
],
"application/vnd.google.colaboratory.intrinsic+json": {
"type": "string"
}
},
"metadata": {},
"execution_count": 7
}
]
```

```
},
{
"cell_type": "code",
"source": [
"#Setting created deployment space as default\n",
"Client.set.default_space(space_uid)"
],
"metadata": {
"colab": {
"base_uri": "https://localhost:8080/",
"height": 36
},
"id": "POnJIdvNd9aV",
"outputId": "6a35dcc3-0279-4738-9632-e12142df9ba2"
```

```
},
"execution_count": 8,
"outputs": [
{
"output_type": "execute_result",
"data": {
"text/plain": [
"'SUCCESS'"
],
"application/vnd.google.colaboratory.intrinsic+json": {
"type": "string"
}
},
"metadata": {},
```

```
"execution_count": 8
}
]
},
{
"cell_type": "code",
"source": [
"#Seeing tensorflow asset_id\n",
"Client.software_specifications.list()"
],
"metadata": {
"colab": {
"base_uri": "https://localhost:8080/"
},
```

"id": "6MHtBaB0eBF8",
"outputId": "0a95db79-4fe3-4e58-80ed-c33b74e71934"
},
"execution_count": 9,
"outputs": [
{
"output_type": "stream",
"name": "stdout",
"text": [
"---------------------------- ------------------------------------ ----\n",
"NAME ASSET_ID TYPE\n",
"default_py3.6 0062b8c9-8b7d-44a0-a9b9-46c416adcbd9 base\n",
"kernel-spark3.2-scala2.12 020d69ce-7ac1-5e68-ac1a-31189867356a base\n",
"pytorch-onnx_1.3-py3.7-edt 069ea134-3346-5748-b513-49120e15d288 base\n",

"scikit-learn_0.20-py3.6 09c5a1d0-9c1e-4473-a344-eb7b665ff687 base\n",

"spark-mllib_3.0-scala_2.12 09f4cff0-90a7-5899-b9ed-1ef348aebdee base\n",

"pytorch-onnx_rt22.1-py3.9 0b848dd4-e681-5599-be41-b5f6fccc6471 base\n",

"ai-function_0.1-py3.6 0cdb0f1e-5376-4f4d-92dd-da3b69aa9bda base\n",

"shiny-r3.6 0e6e79df-875e-4f24-8ae9-62dcc2148306 base\n",

"tensorflow_2.4-py3.7-horovod 1092590a-307d-563d-9b62-4eb7d64b3f22 base\n",

"pytorch_1.1-py3.6 10ac12d6-6b30-4ccd-8392-3e922c096a92 base\n",

"tensorflow_1.15-py3.6-ddl 111e41b3-de2d-5422-a4d6-bf776828c4b7 base\n",

"autoai-kb_rt22.2-py3.10 125b6d9a-5b1f-5e8d-972a-b251688ccf40 base\n",

"runtime-22.1-py3.9 12b83a17-24d8-5082-900f-0ab31fbfd3cb base\n",

"scikit-learn_0.22-py3.6 154010fa-5b3b-4ac1-82af-4d5ee5abbc85 base\n",

"default_r3.6 1b70aec3-ab34-4b87-8aa0-a4a3c8296a36 base\n",

"pytorch-onnx_1.3-py3.6 1bc6029a-cc97-56da-b8e0-39c3880dbbe7 base\n",

"kernel-spark3.3-r3.6 1c9e5454-f216-59dd-a20e-474a5cdf5988 base\n",

"pytorch-onnx_rt22.1-py3.9-edt 1d362186-7ad5-5b59-8b6c-9d0880bde37f base\n",

"tensorflow_2.1-py3.6 1eb25b84-d6ed-5dde-b6a5-3fbdf1665666 base\n",

"spark-mllib_3.2 20047f72-0a98-58c7-9ff5-a77b012eb8f5 base\n",

"tensorflow_2.4-py3.8-horovod 217c16f6-178f-56bf-824a-b19f20564c49 base\n",

"runtime-22.1-py3.9-cuda 26215f05-08c3-5a41-a1b0-da66306ce658 base\n",

"do_py3.8 295addb5-9ef9-547e-9bf4-92ae3563e720 base\n",

"autoai-ts_3.8-py3.8 2aa0c932-798f-5ae9-abd6-15e0c2402fb5 base\n",

"tensorflow_1.15-py3.6 2b73a275-7cbf-420b-a912-eae7f436e0bc base\n",

"kernel-spark3.3-py3.9 2b7961e2-e3b1-5a8c-a491-482c8368839a base\n",

"pytorch_1.2-py3.6 2c8ef57d-2687-4b7d-acce-01f94976dac1 base\n",

"spark-mllib_2.3 2e51f700-bca0-4b0d-88dc-5c6791338875 base\n",

"pytorch-onnx_1.1-py3.6-edt 32983cea-3f32-4400-8965-dde874a8d67e base\n",

"spark-mllib_3.0-py37 36507ebe-8770-55ba-ab2a-eafe787600e9 base\n",

"spark-mllib_2.4 390d21f8-e58b-4fac-9c55-d7ceda621326 base\n",

"autoai-ts_rt22.2-py3.10 396b2e83-0953-5b86-9a55-7ce1628a406f base\n",
448
"xgboost_0.82-py3.6 39e31acd-5f30-41dc-ae44-60233c80306e base\n",
449
"pytorch-onnx_1.2-py3.6-edt 40589d0e-7019-4e28-8daa-fb03b6f4fe12 base\n",
450
"pytorch-onnx_rt22.2-py3.10 40e73f55-783a-5535-b3fa-0c8b94291431 base\n",
451
"default_r36py38 41c247d3-45f8-5a71-b065-8580229facf0 base\n",
452
"autoai-ts_rt22.1-py3.9 4269d26e-07ba-5d40-8f66-2d495b0c71f7 base\n",
453
"autoai-obm_3.0 42b92e18-d9ab-567f-988a-4240ba1ed5f7 base\n",
454
"pmml-3.0_4.3 493bcb95-16f1-5bc5-bee8-81b8af80e9c7 base\n",
455
"spark-mllib_2.4-r_3.6 49403dff-92e9-4c87-a3d7-a42d0021c095 base\n",
456
"xgboost_0.90-py3.6 4ff8d6c2-1343-4c18-85e1-689c965304d3 base\n",
457
"pytorch-onnx_1.1-py3.6 50f95b2a-bc16-43bb-bc94-b0bed208c60b base\n",
458
"autoai-ts_3.9-py3.8 52c57136-80fa-572e-8728-a5e7cbb42cde base\n",
459
"spark-mllib_2.4-scala_2.11 55a70f99-7320-4be5-9fb9-9edb5a443af5 base\n",
460
"spark-mllib_3.0 5c1b0ca2-4977-5c2e-9439-ffd44ea8ffe9 base\n",
461

"autoai-obm_2.0 5c2e37fa-80b8-5e77-840f-d912469614ee base\n",

"spss-modeler_18.1 5c3cad7e-507f-4b2a-a9a3-ab53a21dee8b base\n",

"cuda-py3.8 5d3232bf-c86b-5df4-a2cd-7bb870a1cd4e base\n",

"autoai-kb_3.1-py3.7 632d4b22-10aa-5180-88f0-f52dfb6444d7 base\n",

"pytorch-onnx_1.7-py3.8 634d3cdc-b562-5bf9-a2d4-ea90a478456b base\n",

"----------------------------- ------------------------------------ ----\n",

"Note: Only first 50 records were displayed. To display more use 'limit' parameter.\n"

]

}

]

},

{

"cell_type": "code",

"source": [

```
"software_space_uid = Client.software_specifications.get_uid_by_name('tensorflow_rt22.1-py3.9')\n",
                                                                                                476
"software_space_uid"
                                                                                                477
],
                                                                                                478
"metadata": {
                                                                                                479
"colab": {
                                                                                                480
"base_uri": "https://localhost:8080/",
                                                                                                481
"height": 36
                                                                                                482
},
                                                                                                483
"id": "bMOPcpvVeDdG",
                                                                                                484
"outputId": "331b9aed-0d7c-48c6-b1f4-2a019ec929c4"
                                                                                                485
},
                                                                                                486
"execution_count": 10,
                                                                                                487
"outputs": [
                                                                                                488
{
                                                                                                489
```

"output_type": "execute_result",
"data": {
"text/plain": [
"'acd9c798-6974-5d2f-a657-ce06e986df4d'"
],
"application/vnd.google.colaboratory.intrinsic+json": {
"type": "string"
}
},
"metadata": {},
"execution_count": 10
}
]
},

```
{
 504
"cell_type": "code",
 505
"source": [
 506
"model_details = Client.repository.store_model(model=\"/content/forest_fire_detection.tgz\",meta_props={\n",
 507
" Client.repository.ModelMetaNames.NAME:\"CNN Model for Forest fire detection\",\n",
 508
" Client.repository.ModelMetaNames.TYPE:\"tensorflow_2.7\",\n",
 509
" Client.repository.ModelMetaNames.SOFTWARE_SPEC_UID:software_space_uid\n",
 510
"})"
 511
],
 512
"metadata": {
 513
"id": "8f2LcaibeGDo"
 514
},
 515
"execution_count": 14,
 516
"outputs": []
 517
```

},
{
"cell_type": "code",
"source": [
"model_details"
],
"metadata": {
"colab": {
"base_uri": "https://localhost:8080/"
},
"id": "pp7M2S9CeWIE",
"outputId": "0c064ee1-9100-4781-b764-7676d8dc6e53"
},
"execution_count": 15,

```
"outputs": [
532
{
533
"output_type": "execute_result",
534
"data": {
535
"text/plain": [
536
"{'entity': {'hybrid_pipeline_software_specs': [],\n",
537
" 'software_spec': {'id': 'acd9c798-6974-5d2f-a657-ce06e986df4d',\n",
538
" 'name': 'tensorflow_rt22.1-py3.9'},\n",
539
" 'type': 'tensorflow_2.7'},\n",
540
" 'metadata': {'created_at': '2022-11-11T21:05:25.592Z',\n",
541
" 'id': '5b00deac-d7d6-42fb-86d5-85db521f4895',\n",
542
" 'modified_at': '2022-11-11T21:05:27.865Z',\n",
543
" 'name': 'CNN Model for Forest fire detection',\n",
544
" 'owner': 'IBMid-66100457F5',\n",
545
```

```
" 'resource_key': '502f7e12-df84-4de4-bad4-187fca47b231',\n",
" 'space_id': '54f66e28-7d03-4808-8e64-b0c3b4826004'},\n",
" 'system': {'warnings': []}}"
]
},
"metadata": {},
"execution_count": 15
}
]
},
{
"cell_type": "code",
"source": [
"model_id = Client.repository.get_model_uid(model_details)\n",
```

```
"model_id"
560
],
561
"metadata": {
562
"colab": {
563
"base_uri": "https://localhost:8080/",
564
"height": 108
565
},
566
"id": "_sna4GaVgsHs",
567
"outputId": "017ace17-0d23-4822-fe0b-054a361aff48"
568
},
569
"execution_count": 16,
570
"outputs": [
571
{
572
"output_type": "stream",
573
```

"name": "stdout",
"text": [
"This method is deprecated, please use get_model_id()\n"
]
},
{
"output_type": "stream",
"name": "stderr",
"text": [
"/usr/local/lib/python3.7/dist-packages/ibm_watson_machine_learning/repository.py:1453: UserWarning: This method is deprecated, please use get_model_id()\n",
" warn(\"This method is deprecated, please use get_model_id()\")\n"
]
},
{

```
"output_type": "execute_result",
"data": {
"text/plain": [
"'5b00deac-d7d6-42fb-86d5-85db521f4895'"
],
"application/vnd.google.colaboratory.intrinsic+json": {
"type": "string"
}
},
"metadata": {},
"execution_count": 16
}
]
},
```

```
601
{
602
"cell_type": "code",
603
"source": [
604
"#Downloading the model from IBM Cloud\n",
605
"Client.repository.download(model_id,'ffd_model.tgz')"
606
],
607
"metadata": {
608
"colab": {
609
"base_uri": "https://localhost:8080/",
610
"height": 53
611
},
612
"id": "IG5PdKS5gvH_",
613
"outputId": "3e36ff90-fce5-4052-c89e-15446ad560a3"
614
},
```

```
"execution_count": 17,
"outputs": [
{
"output_type": "stream",
"name": "stdout",
"text": [
"Successfully saved model content to file: 'ffd_model.tgz'\n"
]
},
{
"output_type": "execute_result",
"data": {
"text/plain": [
"'/content/ffd_model.tgz'"
```

```
],
"application/vnd.google.colaboratory.intrinsic+json": {
"type": "string"
}
},
"metadata": {},
"execution_count": 17
}
]
}
]
}
```