

# APS Developer Cheat Sheet

Single-page reference for Autodesk Platform Services APIs

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## Table of Contents

<b>1 APS Developer Cheat Sheet</b>	<b>1</b>
1.1 Authentication	1
1.1.1 OAuth Flow Comparison	1
1.1.2 Essential OAuth Scopes	2
1.2 Data Management API	2
1.2.1 Common Endpoints	2
1.2.2 URN Formats	2
1.3 Object Storage Service (OSS)	2
1.3.1 Bucket Operations	2
1.3.2 Object Operations	3
1.3.3 Bucket Naming Rules	3
1.4 Model Derivative API	3
1.4.1 Translation Workflow	3
1.4.2 Translation Operations	3
1.4.3 Output Formats	3
1.5 Design Automation API	3
1.5.1 Engine Support	3
1.5.2 DA Components	4
1.6 Common Error Codes	4
1.7 Rate Limits	4
1.8 Quick Setup Commands	4
1.8.1 First-Time Setup	4
1.8.2 Common Workflows	4
1.9 Emergency Commands	5
1.10 Pro Tips	5

## 1 APS Developer Cheat Sheet

- Single-page reference for Autodesk Platform Services (APS) with RAPS CLI shortcuts\*\*
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### 1.1 Authentication

#### 1.1.1 OAuth Flow Comparison

2-Legged OAuth	3-Legged OAuth
<b>Use:</b> Server-to-server	<b>Use:</b> User-facing apps
<b>Context:</b> App identity	<b>Context:</b> User + app
<b>BIM360:</b> Limited access	<b>BIM360:</b> Full access
<b>Grant:</b> client_credentials	<b>Grant:</b> authorization_code
<b>RAPS:</b> raps auth login	<b>RAPS:</b> raps auth login --3legged

### 1.1.2 Essential OAuth Scopes

Scope	Purpose	RAPS Usage
data:read	Read files/projects	--scopes data:read
data:write	Modify metadata	--scopes data:read,data:write
data:create	Upload files	--scopes data:read,data:write,data:create
bucket:read	List buckets	--scopes bucket:read
bucket:create	Create buckets	--scopes bucket:read,bucket:create
viewables:read	View models	--scopes viewables:read
code:all	Design Automation	--scopes code:all
account:read	BIM360/ACC info	--scopes account:read

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## 1.2 Data Management API

### 1.2.1 Common Endpoints

Operation	Manual API Call	RAPS Command
List Hubs	GET /project/v1/hubs	raps dm hubs
List Projects	GET /project/v1/hubs/{id}/projects	raps dm projects
List Folders	GET /data/v1/projects/{id}/folders/{id}/contents	raps dm folders <project>
Upload File	Multi-step: Create storage → Upload → Create item → Create version	raps dm upload <file> --project <id>
Download	GET /data/v1/projects/{id}/downloads + download URL	raps dm download <item_id>

### 1.2.2 URN Formats

Context	URN Format	Example
OSS Object	urn:adsk.objects:os.object:{bucket}:{object}	urn:adsk.objects:os.object:mybucket:mo
Data Mgmt	urn:adsk.wipprod:dm.lineage:{item_id}	urn:adsk.wipprod:dm.lineage:abc123...
Encoded	Base64 URL-safe encoding	dXJu0mFkc2sub2JqZWNOcy...

- URN Encoding:\*\*

```
# Manual (error-prone)
echo -n "urn:..." | base64 | tr '+/' '-_' | tr -d '='

# With RAPS
raps urn encode "urn:adsk.objects:os.object:bucket/file.dwg"
```

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## 1.3 Object Storage Service (OSS)

### 1.3.1 Bucket Operations

Operation	Manual API	RAPS Command
List Buckets	GET /oss/v2/buckets	raps bucket list
Create Bucket	POST /oss/v2/buckets	raps bucket create <name>
Delete Bucket	DELETE /oss/v2/buckets/{key}	raps bucket delete <name>

### 1.3.2 Object Operations

Operation	Manual API	RAPS Command
List Objects	GET /oss/v2/buckets/{key}/objects	raps oss list <bucket>
Upload Object	PUT /oss/v2/buckets/{key}/objects/{name}	raps oss upload <file> <bucket>
Download	GET /oss/v2/buckets/{key}/objects/{name}	raps oss download <bucket>

### 1.3.3 Bucket Naming Rules

- 3-128 characters, lowercase, numbers, hyphens
- Must start/end with letter or number
- No spaces, underscores, IP addresses
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## 1.4 Model Derivative API

### 1.4.1 Translation Workflow

1. Upload → 2. Start Translation → 3. Poll Status → 4. Download Results

### 1.4.2 Translation Operations

Operation	Manual Process	RAPS Command
Start Translation	POST /modelderivative/v2/designdata/job svf2	raps translate <urn> --formats
Check Status	GET /modelderivative/v2/designdata/{urn}/manifest	raps translate status <urn>
Wait Complete	Manual polling with delays	raps translate <urn> --wait
Get Properties	GET /modelderivative/v2/designdata/{urn}/metadata/{guid}/properties	raps translate properties

### 1.4.3 Output Formats

Format	Use Case	RAPS Code
<b>SVF2</b>	Web viewer (modern)	svf2
<b>SVF</b>	Web viewer (legacy)	svf
<b>OBJ</b>	3D meshes	obj
<b>STL</b>	3D printing	stl
<b>PDF</b>	2D drawings	pdf
<b>DWG</b>	AutoCAD format	dwg

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## 1.5 Design Automation API

### 1.5.1 Engine Support

Engine	File Types	RAPS Command
<b>AutoCAD</b>	DWG, DXF	raps da engines --filter autocad
<b>Revit</b>	RVT, RFA	raps da engines --filter revit
<b>Inventor</b>	IPT, IAM	raps da engines --filter inventor
<b>3ds Max</b>	MAX	raps da engines --filter max

## 1.5.2 DA Components

AppBundle (code) + Activity (process) + WorkItem (execution)

Component	RAPS Management
AppBundle	raps da appbundle create
Activity	raps da activity create
WorkItem	raps da workitem submit

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## 1.6 Common Error Codes

Code	Cause	RAPS Solution
400	Invalid request format	Built-in validation
401	Invalid/expired token	raps auth refresh
403	Insufficient permissions	raps auth status --scopes
404	URN not found	raps urn encode
409	Bucket name conflict	raps bucket list first
429	Rate limit exceeded	Built-in rate limiting

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## 1.7 Rate Limits

API	Limit	RAPS Handling
Authentication	500/min	Automatic token reuse
Data Management	100/min	Intelligent batching
Model Derivative	20 concurrent	Queue management
OSS	500/min	Parallel optimization

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## 1.8 Quick Setup Commands

### 1.8.1 First-Time Setup

```
# Install RAPS
# Windows: scoop install raps
# macOS: brew install raps
# Linux: cargo install raps-cli
```

```
# Authenticate
raps auth login
```

```
# Test
raps auth status
```

### 1.8.2 Common Workflows

```
# Upload → Translate → View
raps oss upload model.rvt mybucket
raps translate $(raps urn encode "urn:adsk.objects:os.object:mybucket:model.rvt") --wait
raps view $(raps urn encode "urn:adsk.objects:os.object:mybucket:model.rvt")
```

```
# Batch Operations
raps oss upload-batch *.dwg --bucket mybucket
raps translate-batch --bucket mybucket --formats svf2
```

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## 1.9 Emergency Commands

```
# Authentication issues
raps auth refresh
raps auth login --force
raps auth status --verbose

# Operation failures
raps health check --comprehensive
raps logs --level error --last 1h
```

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## 1.10 Pro Tips

- Use `raps examples` for common workflows
- Set up profiles: `raps auth login --profile <name>`
- Enable verbose: `--verbose` flag for debugging
- Health check: `raps health check` for issues
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- Support:\*\* [RAPS Discord](#) | [GitHub](#)
- Resources:\*\* [rapscli.xyz](#) | [APS Docs](#)
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- Print-friendly format • Save for reference • Share with team\*
- RAPS v4.2.1 | APS APIs: Auth v2, DM v1, MD v2, OSS v2, DA v3 | January 2026\*