



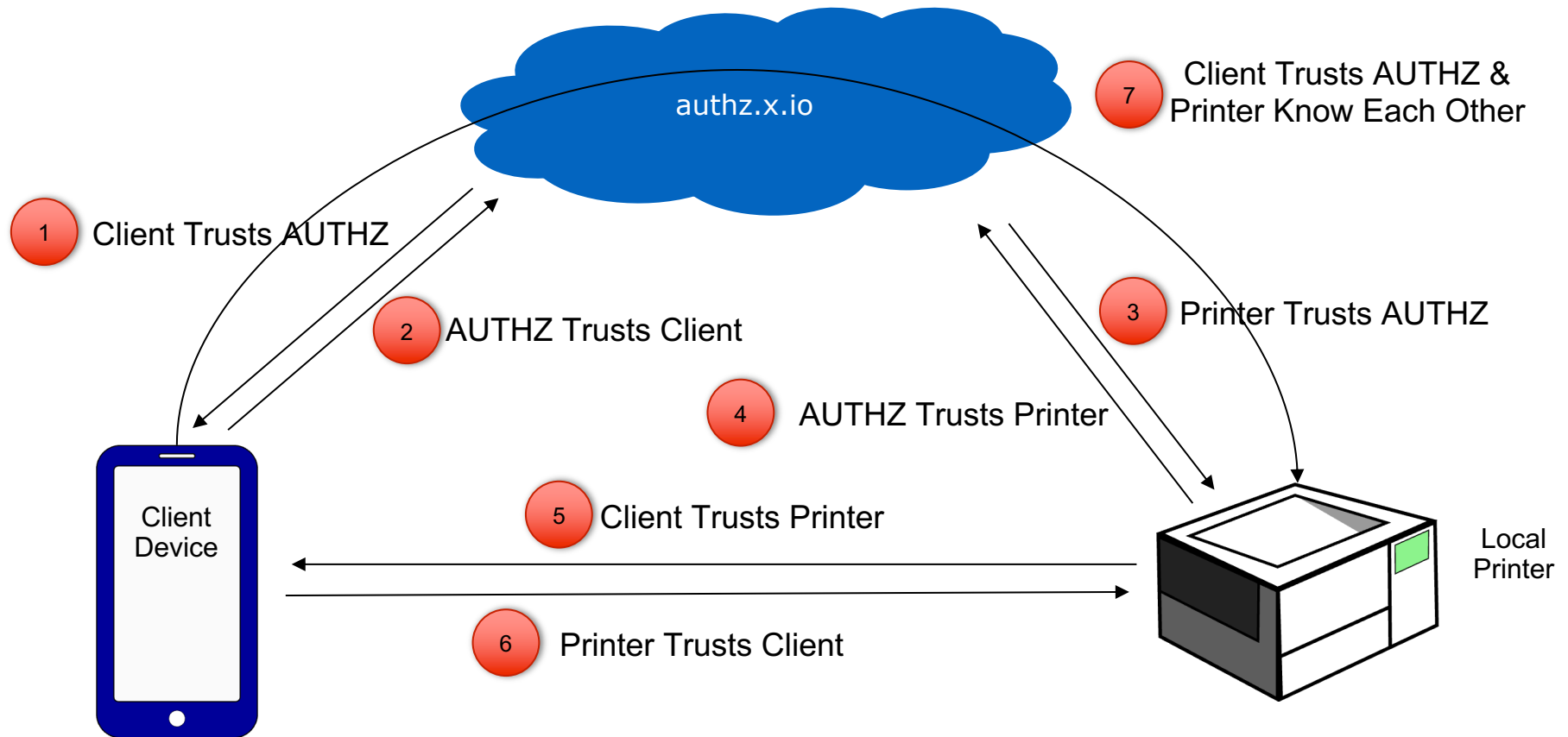
The Printer Working Group

OAuth 2.0 Updates: Trust Analysis and Use Case Diagrams

Smith Kennedy, HP Inc.

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OAuth 2.0 Trust Relationships





OAuth 2.0 Trust Relationships

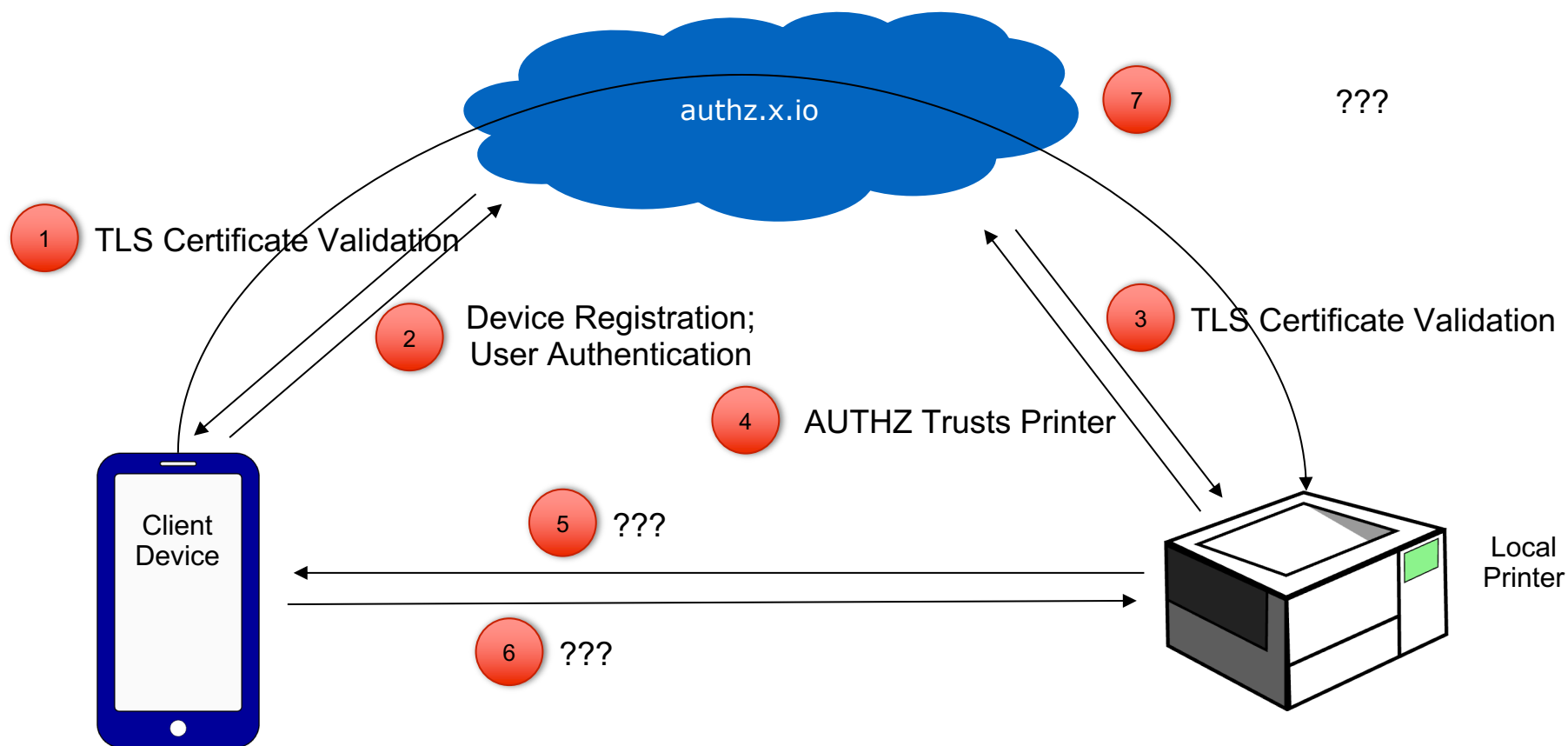
Relationship	Mechanism	Comments
1. Client Trusts AUTHZ		
2. AUTHZ Trusts Client		
3. Printer Trusts AUTHZ		
4. AUTHZ Trusts Printer		
5. Client Trusts Printer		
6. Printer Trusts Client		
7. Client Trusts AUTHZ & Printer Know Each Other		



OAuth 2.0 Trust Relationships

Relationship	Mechanism	Comments
1. Client Trusts AUTHZ	TLS Certificate Validation	AUTHZ has valid certificate issued by well known CA
2. AUTHZ Trusts Client	Device Registration; User Authentication	User account creation might be needed
3. Printer Trusts AUTHZ	TLS Certificate Validation	AUTHZ has valid certificate issued by well known CA
4. AUTHZ Trusts Printer	Device Registration	What is the artifact the Printer acquires via registration? Does that matter?
5. Client Trusts Printer	???	
6. Printer Trusts Client	???	
7. Client Trusts AUTHZ & Printer Know Each Other	???	

OAuth 2.0 Trust Relationships





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3. Printer Trusts AUTHZ	TLS Certificate Validation	AUTHZ has valid certificate issued by well known CA
4. AUTHZ Trusts Printer	Device Registration	What is the artifact the Printer acquires via registration? Does that matter?
5. Client Trusts Printer	TLS Certificate Validation or TOFU / Certificate Pinning	Well Known CA issued certificate or private CA / self-signed certificate
6. Printer Trusts Client	Local Authentication or OAuth device token	AUTHZ has Well Known CA issued certificate
7. Client Trusts AUTHZ & Printer Know Each Other		



5. Client Trusts Printer

Some combination of the following:

- TLS Certificate Validation + FQDN
- Self-signed certificate + TOFU / Certificate Pinning



6. Printer Trusts Client

Some combination of the following:

- Local Authentication
- OAuth device token

7. Client Trusts AUTHZ & Printer Know Each Other



Requirements

- Token exchange requires a trustworthy resource identifier for the "resource" parameter
- AUTHZ accepts resource identifier and returns an access token in response to a token exchange request
- Printer accepts "device access token"

7. Client Trusts AUTHZ & Printer Know Each Other



Options

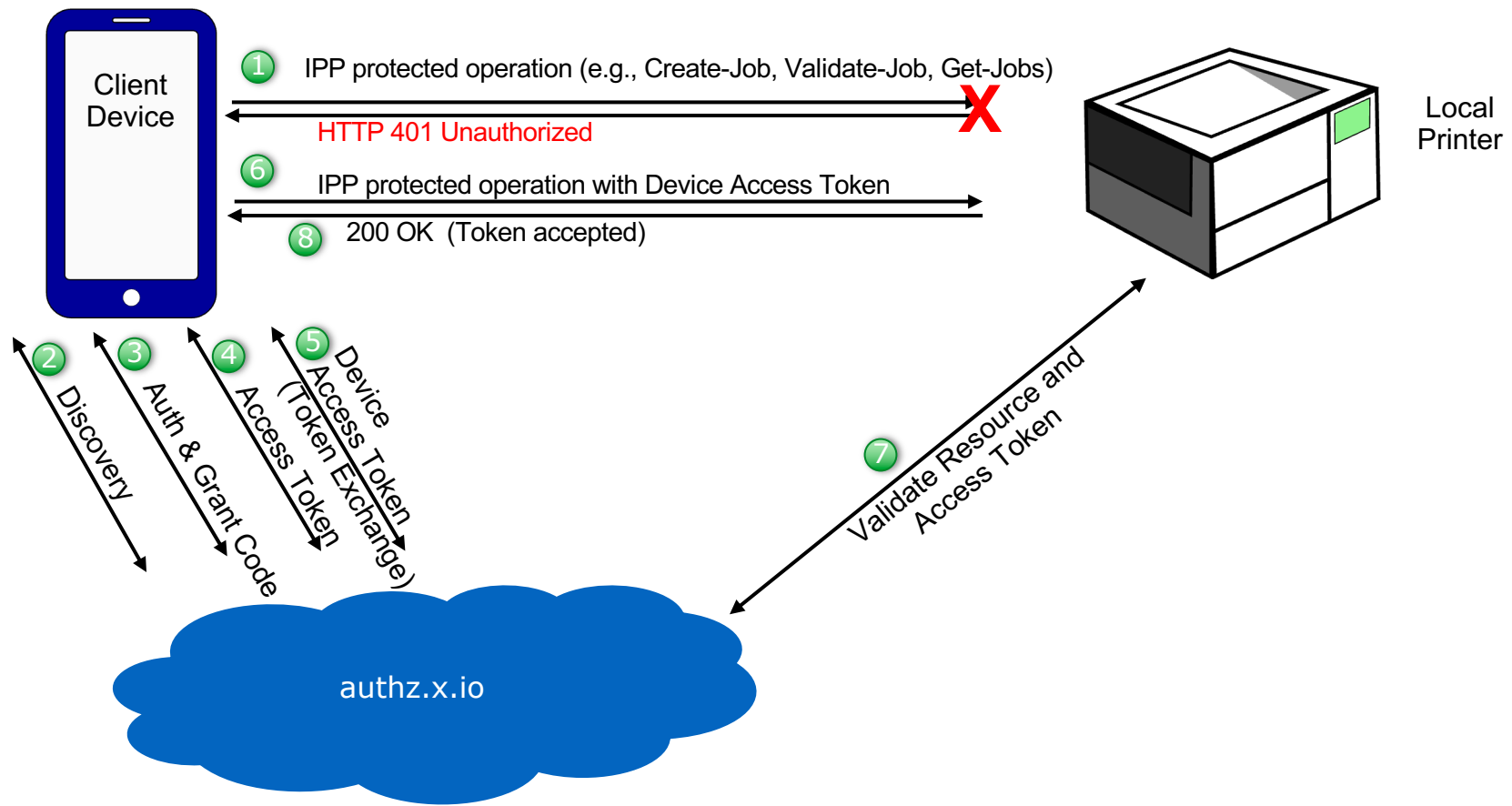
- Printer hostname / URI provided to AUTHZ as resource identifier
- Certificate validation of AUTHZ and Printer match
- JWE resource identifier generated on demand from the printer by the AUTHZ is given to client for use in token exchange
- Printer certificate fingerprint provided to AUTHZ as resource identifier
- Other options???



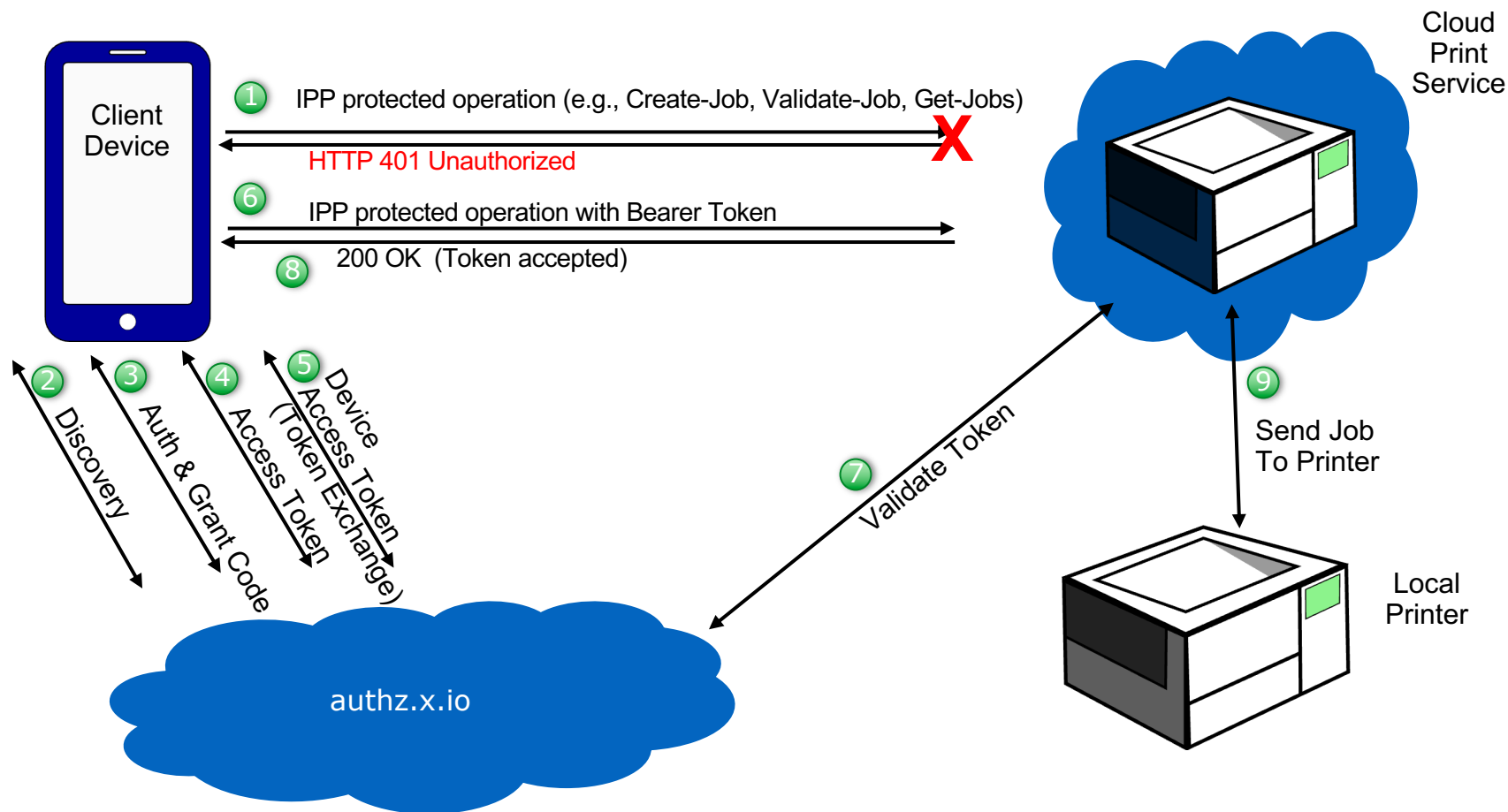
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Use Cases

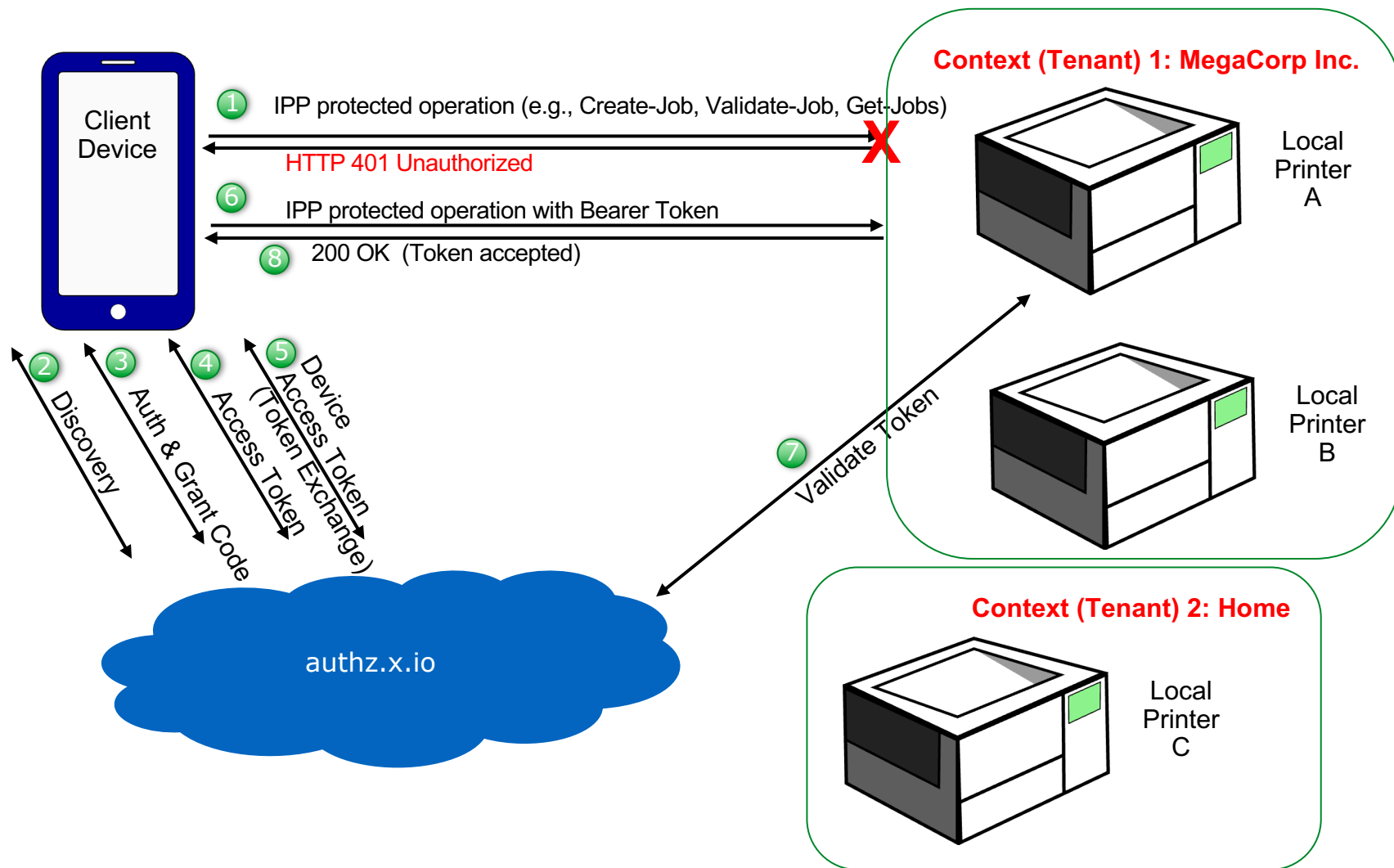
Use Case 1: Local Printing with OAuth 2.0 Access Control



Use Case 2: Cloud Printing with OAuth 2.0 Access Control



Local Printing with OAuth 2.0 Access Control – Multiple Printer Contexts





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Backup

Printer Registration with Device Authorization Grant (RFC 8626)

