WSO2CON NORTH AMERICA

May 20 - 22, 2026 | Austin, Texas, USA

Designing APIs & MCP for AI Readiness

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APIs are built for customer experiences!

A human centric retail experience

User actions

- Searches for *“Running shoes under $150”*
- Filters by size and brand
- Views a product
- Adds it to cart
- Checks out

User experience

- Linear
- Intentional
- Rate-limited by human behavior
- Context held in the UI, not the API

APIs designed to support this experience

```
GET /products?query=running+shoes&max_price=150
GET /products/{id}
POST /cart/items
POST /checkout
```

"Today, most AI agents use the same APIs built for human centric experiences!"

An agentic retail experience

“Find me the best running shoes under $150, in my size, available to deliver within 2 days, with the best reviews.”

Actions

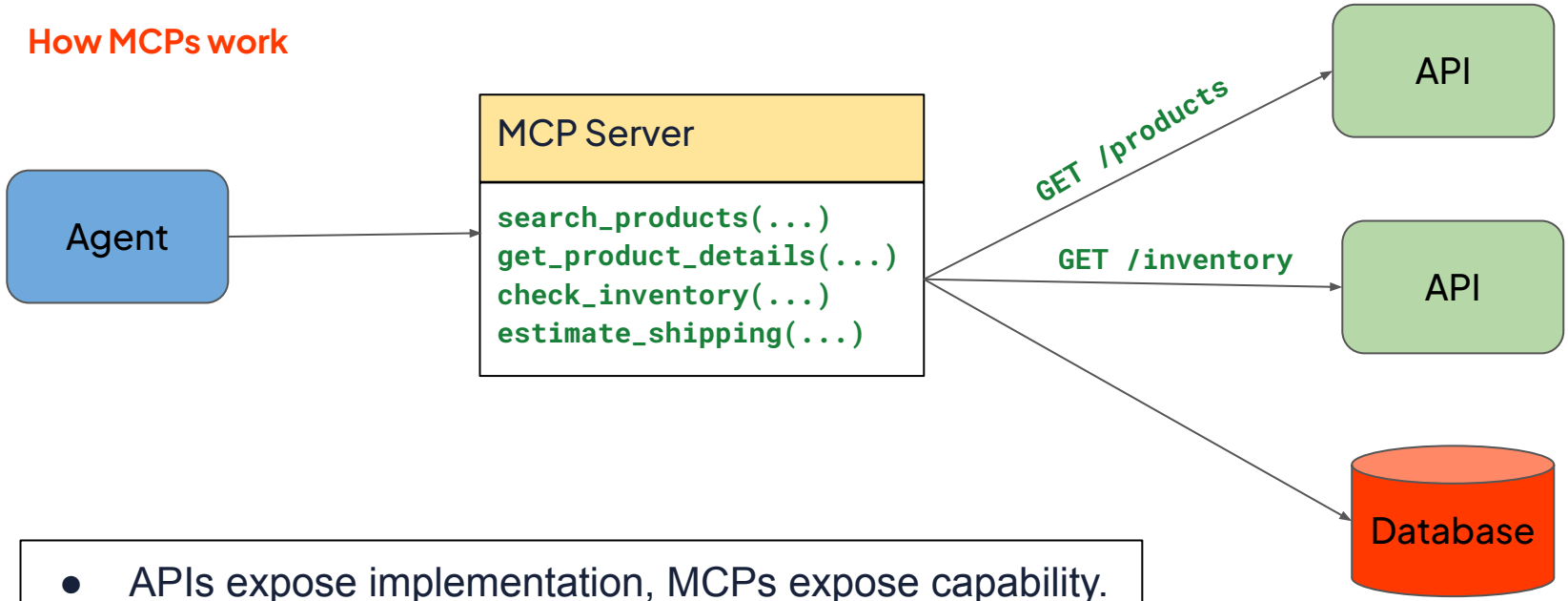
- Query *hundreds* of products
- Repeatedly re-rank results
- Compare prices across vendors
- Re-check inventory and delivery windows
- Simulate multiple carts
- Retry aggressively when responses are unclear
- Chain calls across multiple APIs

Experience

- Exploratory
- Non-linear
- Probabilistic
- Machine-driven
- Cost-blind unless constrained

Agents use MCP servers. Can it help?

How MCPs work



- APIs expose implementation, MCPs expose capability.
- MCP is an integration layer, not a cure!

Design enhancements to make APIs AI-ready

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Make the intent of the API explicit, not implicit.

- **Tools reconstruct business meaning from low-level endpoints**
  - Tool `evaluate_products` would check for reviews, delivery SLAs, etc.
- **Introduce endpoint `POST /evaluate` to the API itself**
  - Inputs
    - Budget, review ratings, delivery SLA, preferences, etc.
  - This prevents tools embedding business logic
  - Prevents fanning out to multiple APIs
  - Provides higher predictability

```
#evaluate_products
candidates = search()
for product in candidates:
   if has_size(product):
      if in_stock(product):
         if shipping_date <= x
      days:
            compute price
```

Business logic creeps into the experience layer

Use machine readable errors and semantics

- **Prevent using ambiguous error codes and messages**
  - “`Product unavailable`” could mean many things, such as “discontinued, not available in stock, variant not available, etc”
- **Use machine readable error codes**
  - Ex: **OUT_OF_STOCK**, **INVALID_VARIANT**, **PRICE_CHANGED**
  - These provide direct context to agents to make appropriate decisions.
    - Budget, review ratings, delivery SLA, preferences, etc.

```
if error contains "unavailable":
      try variants endpoint
      try inventory endpoint
      try different fulfillment
```

First-class Idempotency and safe retries

Not all retries by agents are safe, they can create duplicate write entries.

- **Scenario: Agent initiates a checkout**
  - Payment takes longer
  - Agent retries!
- **Use Idempotency-Keys to prevent duplicate writes**
  - Client obtains a unique idempotency-key for each unique request.

```
POST /checkout
Idempotency-Key: 8f2d-abc-9012
```

  - A given Idempotency key is only processed once by a Server.
  - For subsequent requests of the same Idempotency key, the initial response is sent back.

Support for dry-runs

Tools must bolt on safety checks to protect against errors on irreversible actions

- **Scenario: Final price and delivery date are only known at check-out**
  - Human users can review the final price and delivery SLA manually
  - Agents would just commit, no review
- **Solutions**
  - Support dry-run operations

    ```
    POST /checkout-dry-run
    ```

  - Allow for two-phase commit

    ```
    POST /checkout → creates confirmation_id
    POST /confirm-checkout/{confirmation_id}
    ```

Offer bulk fetch operations to reduce fan-out

Agents iterate over items looking for “best-possible” options. They end up calling endpoints N times for N items.

- **Scenario: Check candidate products to evaluate suitability**

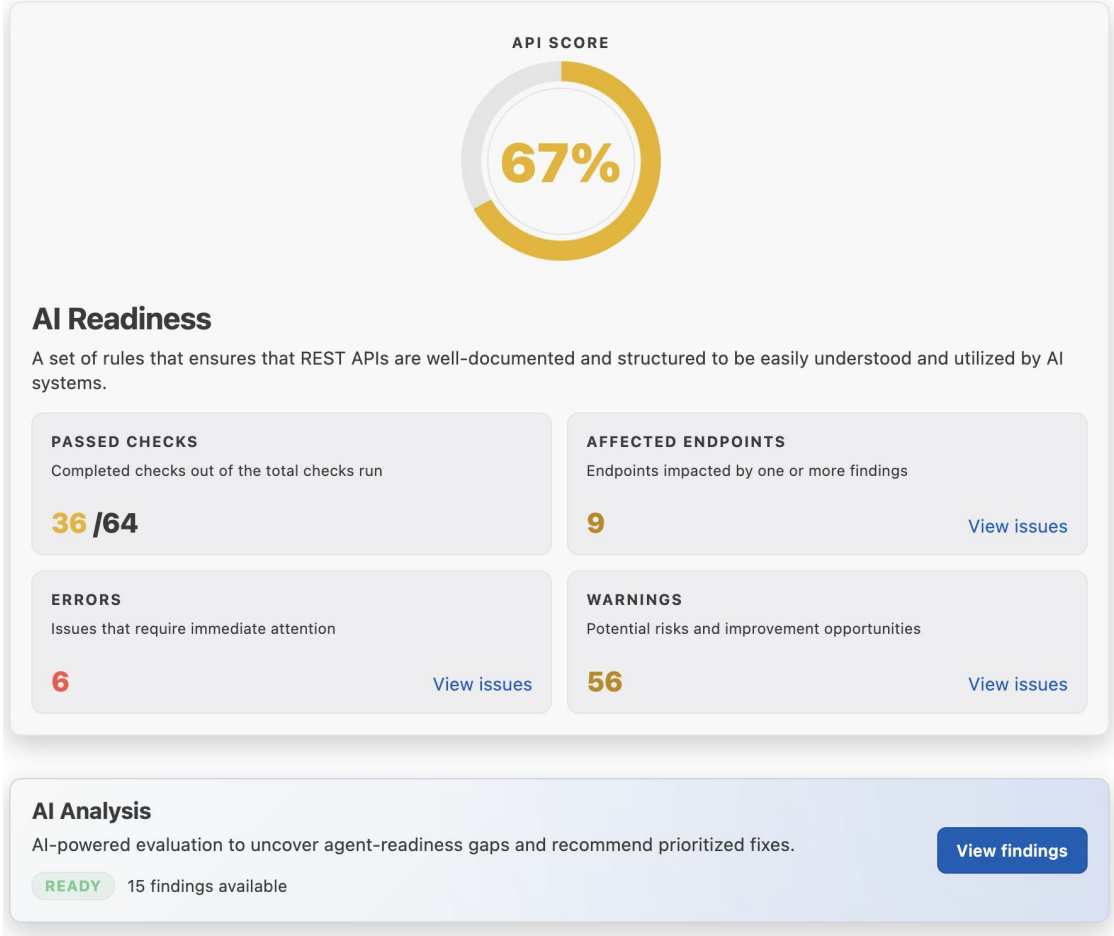
```
for product in candidates:
  GET /products/{product_id}:
  check eligibility
```

Fan out

- **Solution**
  - Offer a bulk fetch operation

```
POST /products-batch-get
{
      “ids”: [1, 4, 7, 13, 21]
}
```

AI readiness checks for APIs



In summary, AI-ready API designs result in APIs that are..

- **Semantic**
  - Clear meaning with machine readable error codes
- **Bounded**
  - Provides limits, pagination, field selection
- **Safe**
  - Idempotency, dry run, explicit side effects
- **Efficient**
  - Bulk operations
- **Auditable**
  - Reason codes, correlation IDs

Runtime enforcements for making APIs AI-ready

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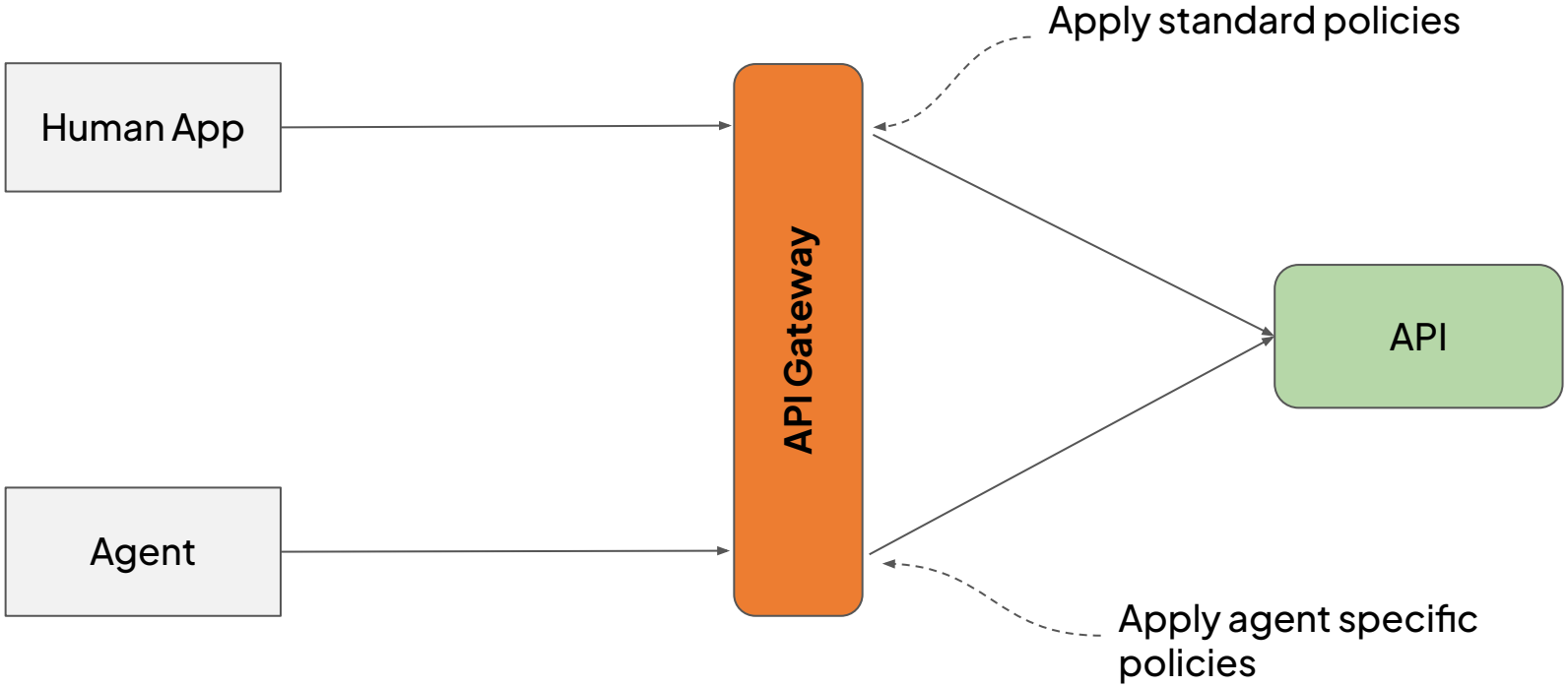
Identify the caller to apply relevant policies

Not all consumers are to be treated the same!



Safe-write protections for autonomous clients

- **Enforce idempotency** on *all* writes
  - Require `Idempotency-Key`, reject if missing
- **Two-phase commit / confirmation gates**
  - Block irreversible operations unless a `confirmed=true` + user consent token is present
- **Dry-run requirement**
  - Require `checkout-dry-run` within N minutes before allowing `confirm-checkout`
- **Write scopes**
  - Allow agents to “create cart” but not “place order” unless elevated scope

Deep observability: trace the *task*, not just the request

Better telemetry is critical for managing agent traffic

- **Propagate Task-ID/Session-ID across calls**
  - `X-Task-Id, traceparent`
- **Per-task metrics**
  - Calls per task
  - Cost units per task
  - Retries per task
  - Top endpoints per tool
- **Audit logs** for tool-invoked writes
  - Who, what, why

Policy enforcement that is capability aware

- API Gateways usually enforce policies by resource path
  - `POST /orders -> authorization policy`
- AI-ready API Gateways should,
  - Enforce policies by capability
    - By tool name: `place_order ->authorization policy`
  - Enforce limits by capability
    - Limit `place_order` to 1 call per minute per consumer

Caching and deduplicating data

- Agents retry a lot
  - Re-evaluate, re-rand, re-check
- An AI-ready API Gateway can cache responses to prevent back-end APIs being exhausted.
  - Short TTL caching for expensive read operations
  - Stale-while-revalidate for list/search operations
  - Request coalescing (deduplication, with one backend call for many waiters)

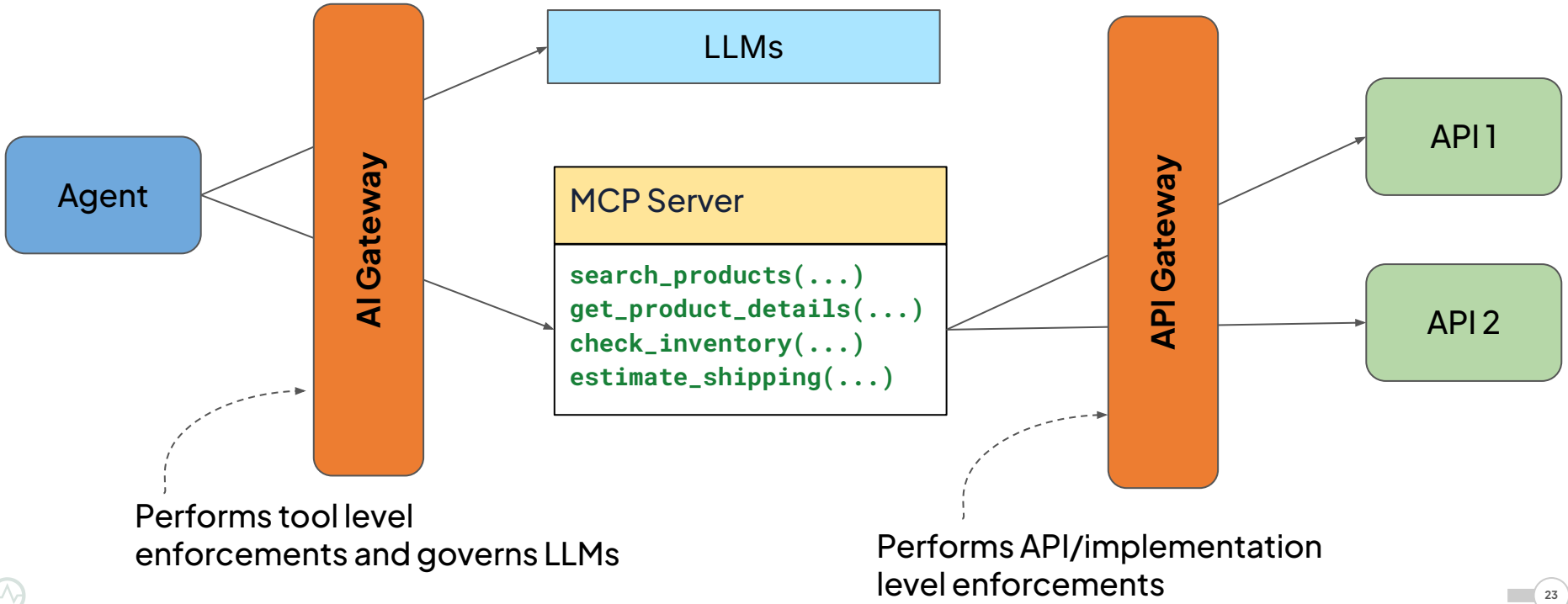
Gateways are critical to making API runtimes AI-ready

Modern AI-ready API Gateways provide

- **Identity**: agent/tool/user context
- **Budget controls**: rate + concurrency + cost units
- **Safety**: idempotency + confirm + dry-run
- **Efficiency**: pagination + field selection + dedupe/caching
- **Semantics**: standardized errors + validation
- **Resilience**: anomaly detection + circuit breakers
- **Observability**: task-level tracing + audit

Gateways are critical to making API runtimes AI-ready

Reference architecture of Gateways in action in the enterprise



Discoverability enforcements for making APIs AI-ready

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If Developer Portals are for humans, what is it for Agents?

Today's API discovery assumes

- A human reads docs
- A human requests credentials
- A human interprets examples
- A human understands business constraints

Agents need

- Machine-readable capability descriptions
- Explicit constraints
- Structured auth flows
- Clear side-effect semantics
- Discoverable affordances

Beyond OpenAPI: Make APIs self describing for AI

OpenAPI describes structure, agents need semantics. Enhance your APIs by adding

- Explicit operation intent descriptions
- Clear side-effect classification
- Retry semantics
- Idempotency requirement flags
- Cost hints
- Rate classification
- Sensitivity classification

```
x-ai-metadata:
  side_effect: irreversible
  retryable: false
  requires_confirmation: true
  sensitivity: financial
  estimated_cost_unit: 5
```

Provide a machine readable capability registry

Instead of scraping API docs, you can expose something like

`GET /.well-known/ai-capabilities`

```
{
  "capabilities": [
    {
      "name": "recommend_products",
      "description": "Find best products within constraints",
      "safe_for_agents": true,
      "side_effect": "none",
      "max_results": 50
    },
    {
      "name": "place_order",
      "safe_for_agents": false,
      "requires_confirmation": true
    }
  ]
}
```

Provide explicit Auth and Delegation Patterns

Humans are told to “get an API key”. Agents need

- OAuth On-Behalf-Of flows
- Scoped access tokens
- Short-lived delegated credentials
- Consent tokens for high-risk operations

```
x-auth:
  flow: oauth2
  delegation: required
  consent_required: true
```

Create an “Agent Portal” layer

The governance/control-plane layer needed for tools

An Agent portal enforces:

- Curated tool definitions
- AI-safe operation tags
- Example invocation plans
- Risk classifications
- Runtime guardrail policies

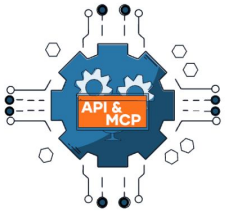
Now discovery is truly capability-driven, not endpoint-driven.

Agent Ready API Portal

APIs, MCP Servers, & Workflows - Ready for AI Agents and Developers

Discover, connect, and orchestrate APIs, MCP tools, and workflows to build applications, AI agents and automations. Browse our catalogs, subscribe and get going in minutes.

Browse our APIs → Browse our MCP Servers → Discover with AI



Explore & Subscribe to our APIs & MCP Servers

- Sign up with us

Developing Applications

- Generate application keys

Conclusion

AI-readiness isn’t about adding a new spec. It’s not about adding an MCP server. And it’s not about flipping a gateway flag.

- Enforce proper design: so APIs encode intent, safety, and semantics.
- Govern the runtime: so probabilistic behavior is governed and observable.
- Enable discovery: so capability publication is intentional and controlled.

With agents, your APIs are not just interfaces. They are decision surfaces.

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Thank You!