

# First Principles

The MCP Servers that work consistently follow four principles. The ones that don't violate them, often in subtle ways.

01  
**CLARITY**  
over completeness

02  
**COHESION**  
over convenience

03  
**EXPLICITNESS**  
over inference

04  
**DETERMINISM**  
over cleverness

## 01 Clarity over completeness

More tools don't add capability — they add confusion. When multiple tools look valid, selection becomes probabilistic. Small phrasing changes produce different choices.

### BAD

```
search_records  
find_records  
query_records
```

### GOOD

```
search_records  
(criteria)  
get_record (by ID)
```

If multiple tools look valid, the model will guess.

## 02 Cohesion over convenience

Mixing unrelated workflows in one server means the same request can map to multiple interpretations. The LLM has no clear context — so it guesses.

### BAD—ONE SERVER

```
search_opportunities  
create_support_ticket  
manage_users
```

### GOOD—SEPARATE

```
Sales server  
Support server  
Billing server
```

If a request can mean multiple things, your scope is too broad.

## 03 Explicitness over inference

Hidden side effects, undocumented limits, missing prerequisites — if they're not stated, the model assumes incorrectly. What's obvious to you is invisible to the model.

### BAD—HIDDEN EFFECTS

```
update_order(id, status)  
+ sends email  
+ updates inventory
```

### GOOD—EXPLICIT

```
update_order_status  
send_order_notification  
process_payment
```

If it's not stated, the model has to guess.

## 04 Determinism over cleverness

If the same inputs produce different outputs, the model can't form stable expectations. Variation is fine — hidden variation is not. Make it vary on explicit inputs, not hidden context.

### BAD—HIDDEN VARIANCE

```
get_customer(id)  
fields vary by role/state
```

### GOOD—EXPLICIT

```
get_customer(id, level)  
summary | standard | full
```

Determinism isn't removing variation, it's making variation predictable.

All four principles do the same thing: they **reduce ambiguity**.  
When ambiguity goes down, reliability goes up.