

Cross Platform REST Enablement of VistA

Saving VistA's Legacy

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Jordan Shows What's Possible

- Modernising VistA with a Web Front End



The Key Piece used by Jordan

- A generic REST Interface around the VistA RPCs
- Jordan invokes them via a PHP back-end
 - This, in turn, invokes a REST interface:
 - Something I wrote many years ago as a demo!
 - Based on a precursor to QEWD
 - Uses an M wrapper around the VistA RPCs:
 - Modified from Nikolay Topalov's VistA RPC wrapper (2014)

Benefits

- Jordan's web-based solution speaks for itself
 - The REST interface to VistA's RPCs has allowed them to build out all the functionality they need

Features

- Uses the login RPC for VistA:
 - Access code / Verify Code
- Establishes and maintains user sessions
- Automatically retrieves and re-saves the M symbol table on each request
 - Stateless back-end environment
- Can operate in Cache, IRIS or YottaDB
- Uses any/all of the VistA RPC's "out of the box"
 - No modifications needed to them



Problems

- Outdated, unsupported technology
- Scalability issues due to the architecture used by the pre-QEWD layer
- Garbage-collection issues internally
- Mixture of Node.js and M code:
 - Maintainability
 - Unnecessary extra layer of technology
 - Node.js/M Global throughput bottleneck



What's Needed for VistA's Future

- A cross-platform, readily-available solution that REST-enables any and all of VistA's RPCs
 - Work with any of the standard web servers on any OS
 - Work with Cache, IRIS or YottaDB
 - Without any coding changes – drop-in replacement
 - Using modern technologies
 - But only the minimum needed
 - Massively Scalable
 - Highest possible performance
 - No unnecessary bottlenecks

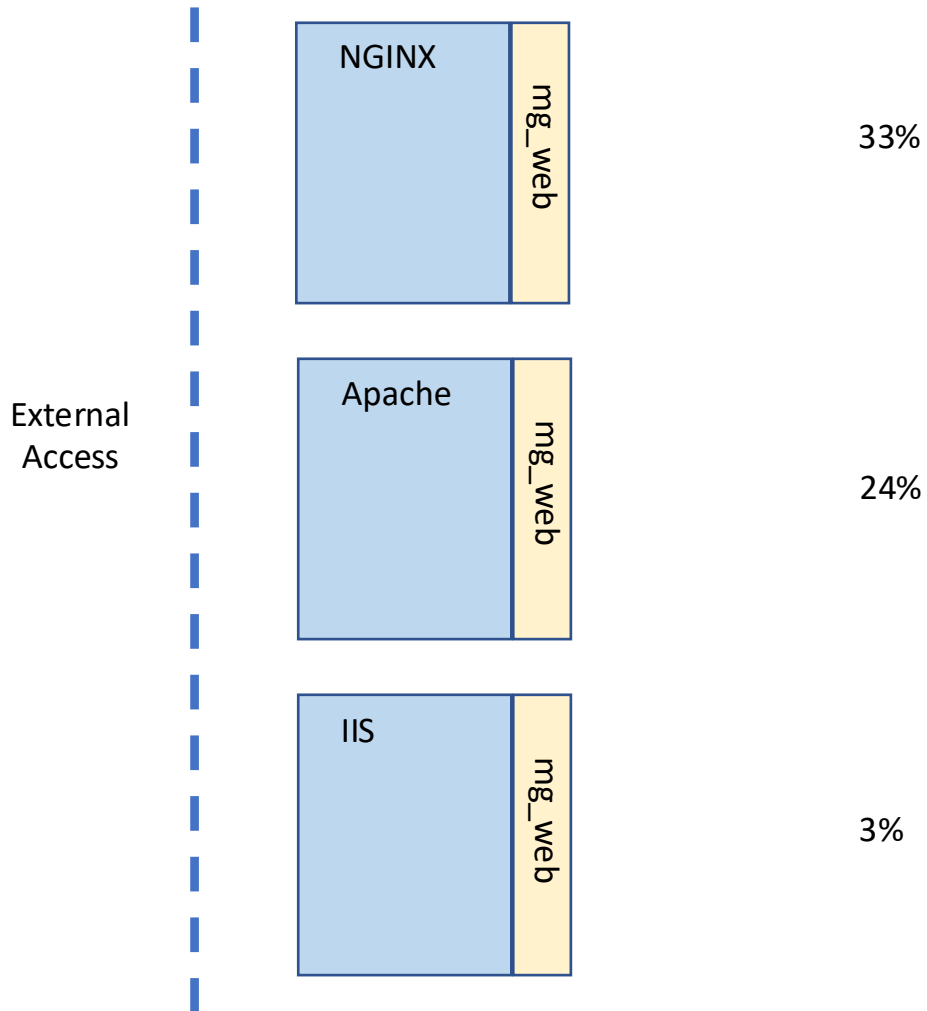


Our Solution

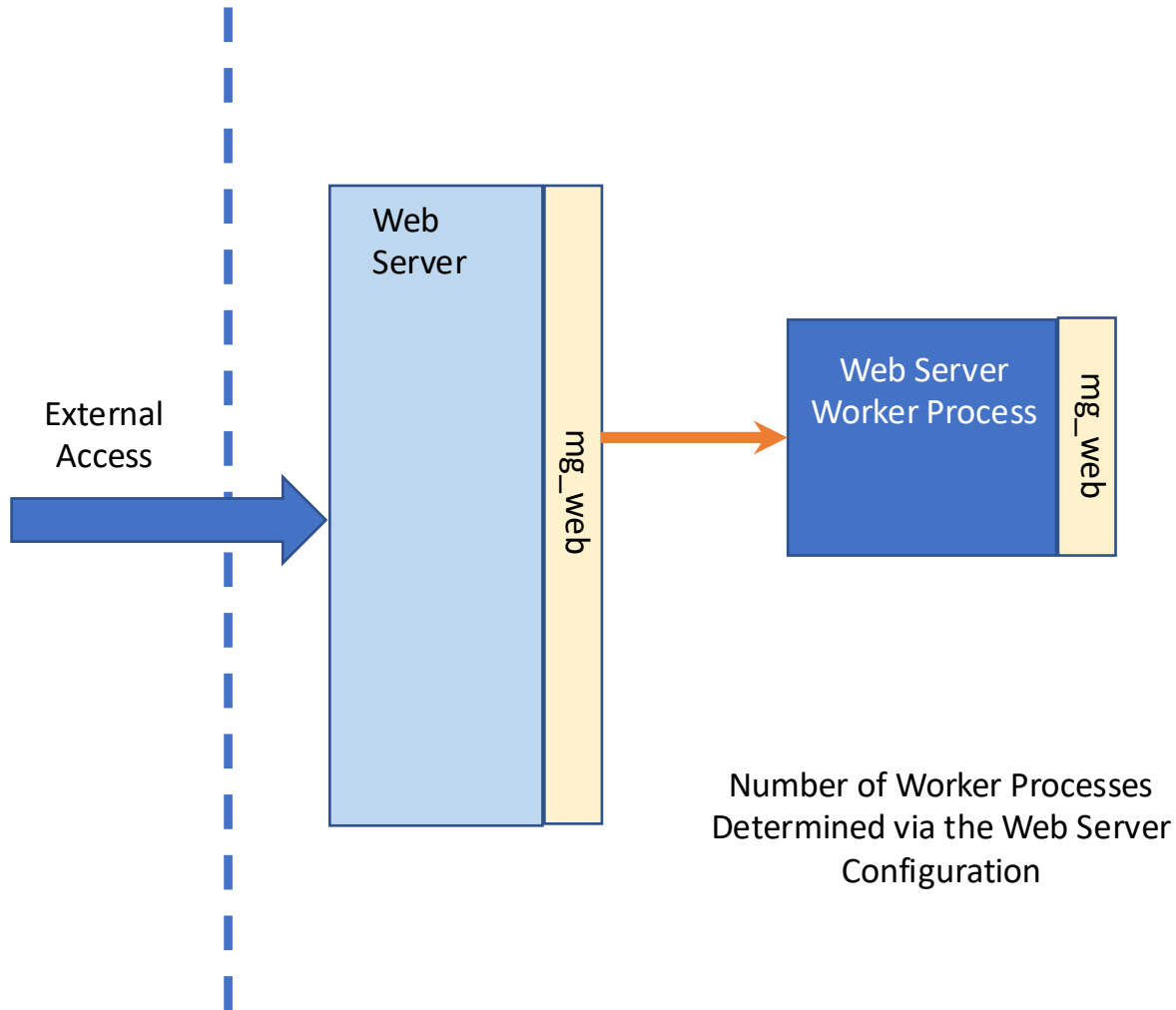
- Based on our *mg-web* and *mg-web-server* technologies
 - Currently named *vehu-mgweb*
- All the benefits of the Jordanian approach
- Without any of the problems



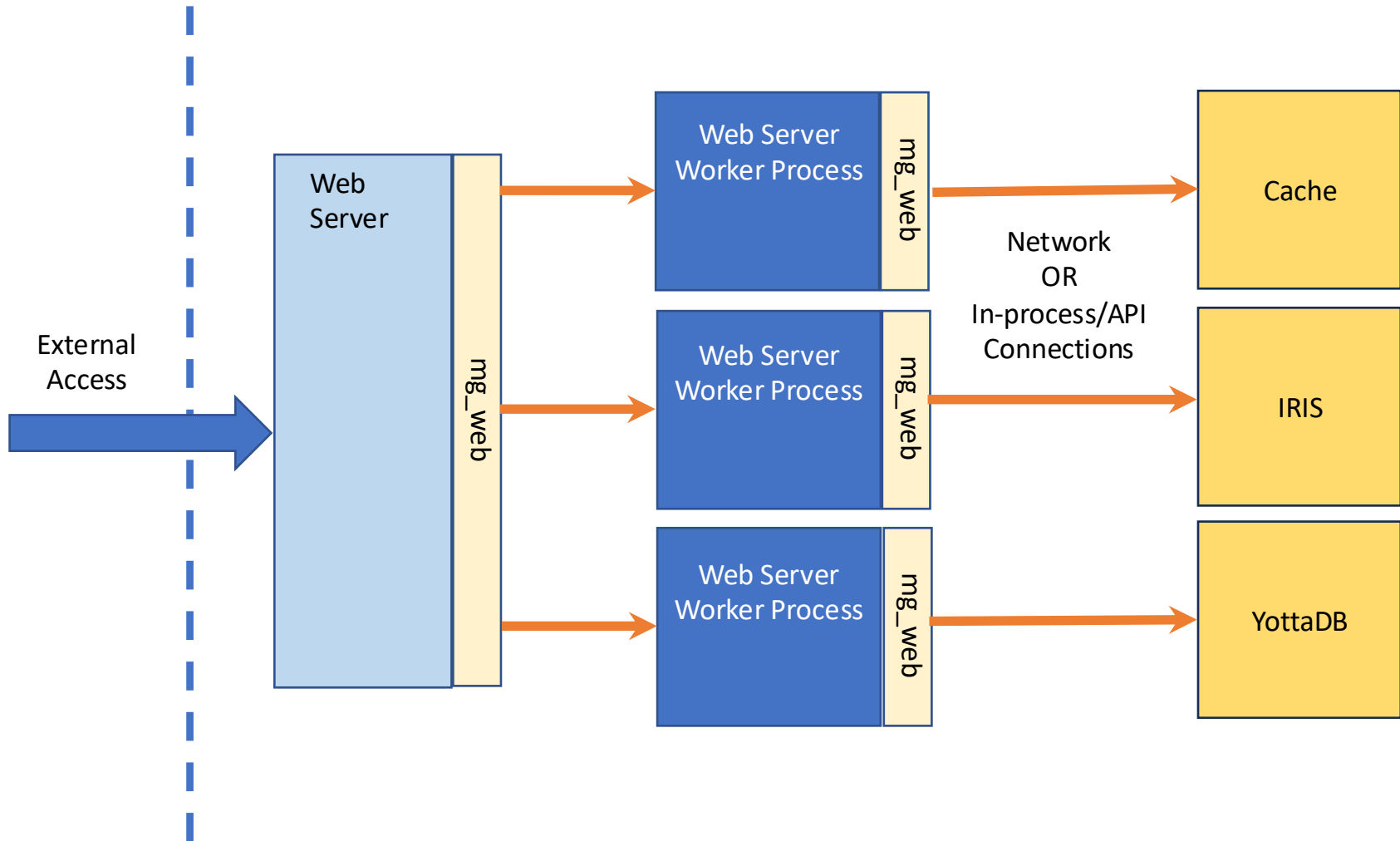
mg-web



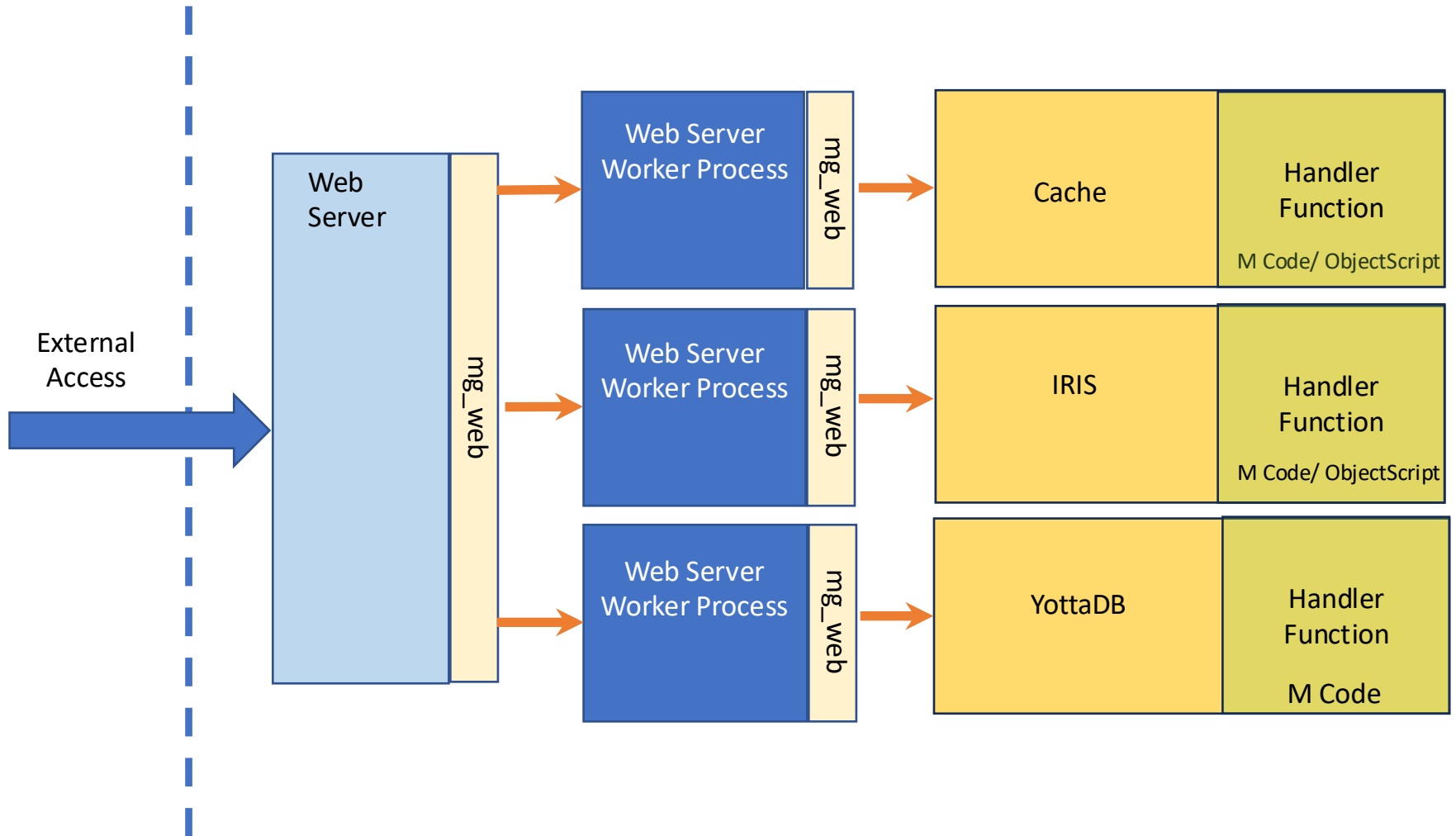
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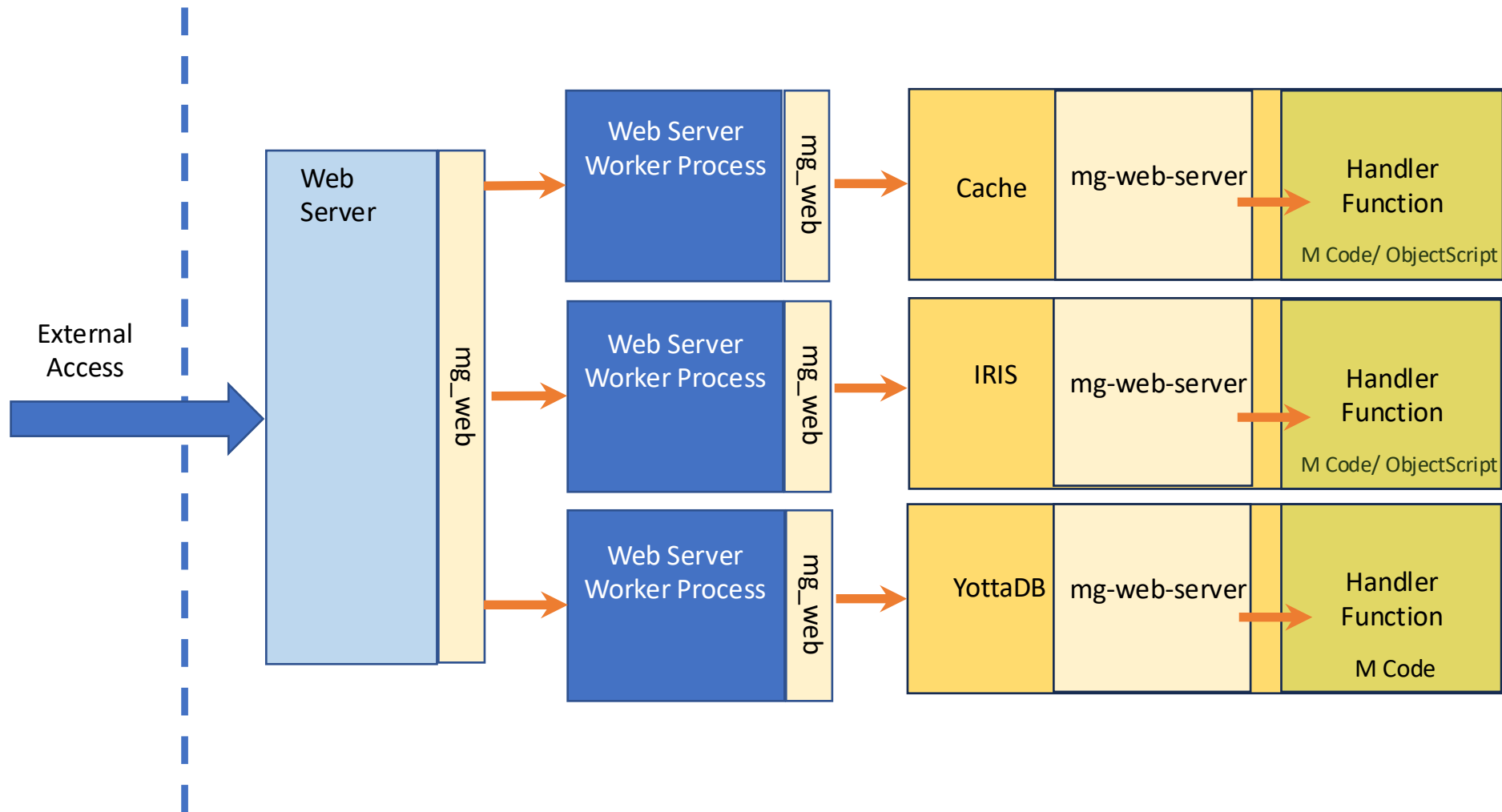
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mg-web



mg-web + mg-web-server

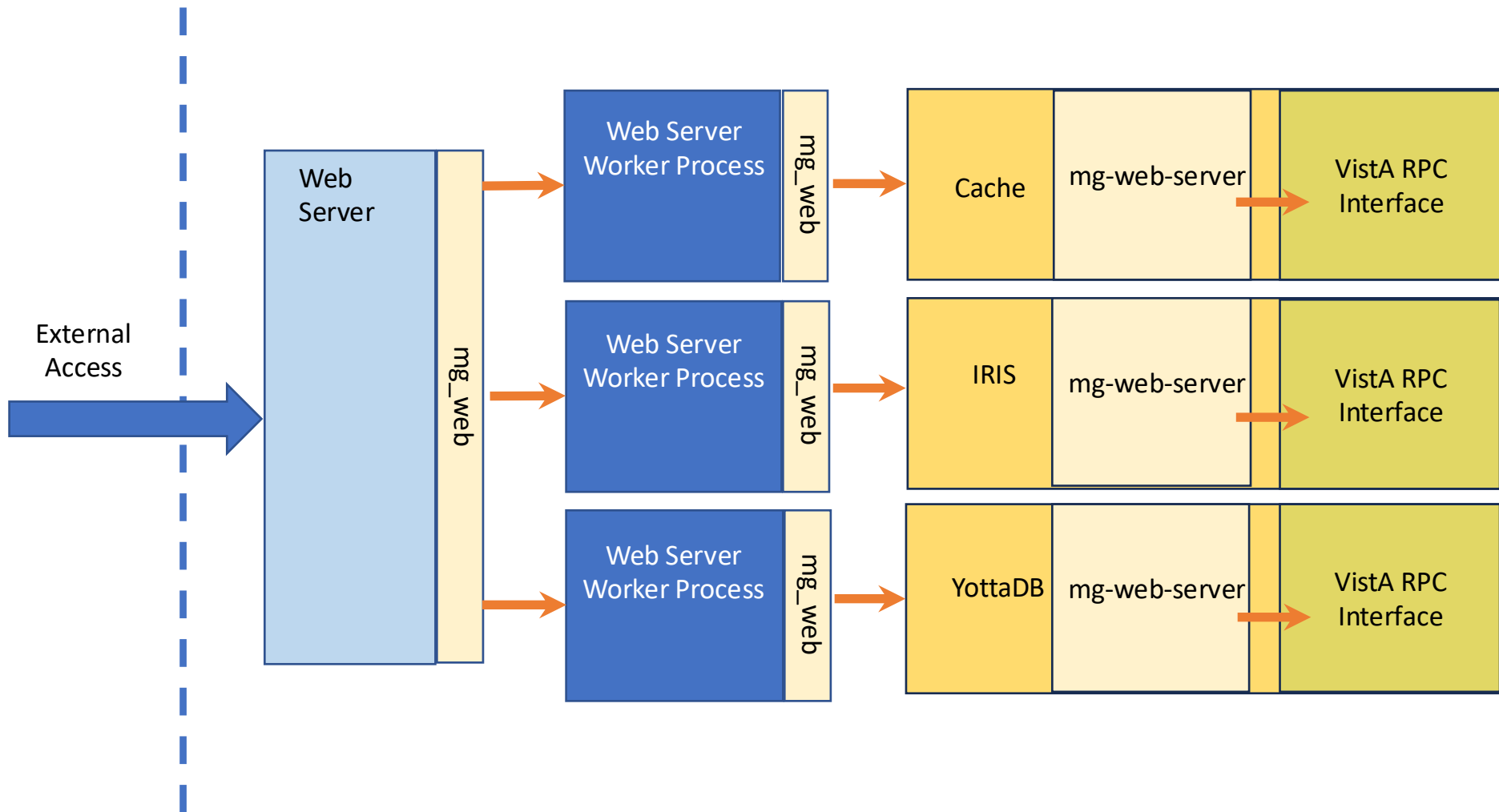


What does mg-web-server do?

- Provides an M-based:
 - REST router
 - Matches an incoming URL pattern to an M handler function
 - HTTP Request unpacker
 - Headers, body, query parameters etc made available via a local array
 - JSON response converter
 - Converts an M output array to JSON
 - M developer just creates a local array containing the response
 - Symbol table save/retrieve functions
 - Cache/IRIS and YottaDB implementations built-in
 - Session management with background session garbage-collection



VistA RPC Interface for mg-web-server



VistA RPC Interface

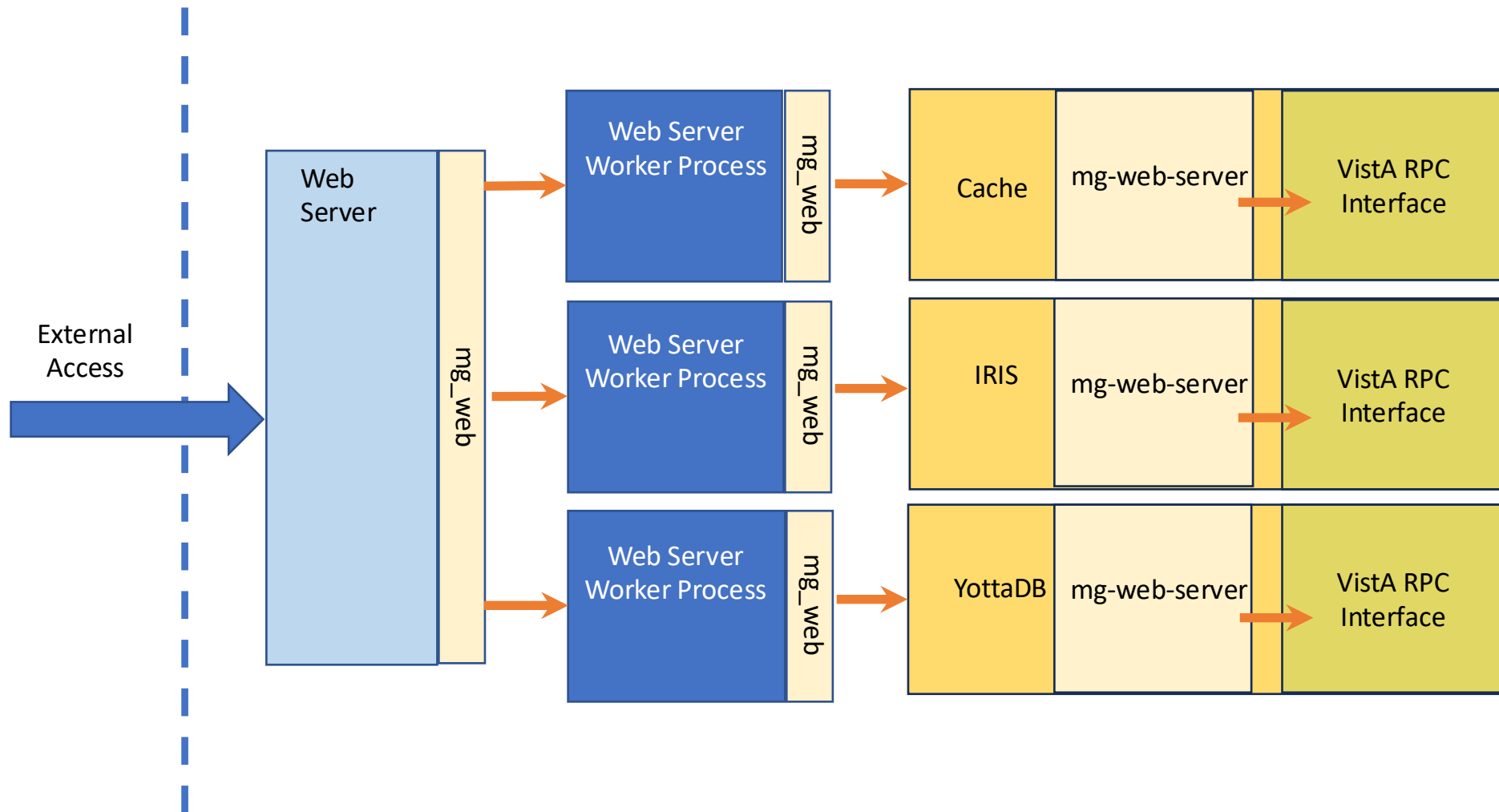
- Re-packages the original solution from Nikolay Topalov, as used by Jordan, as an mg-web-compatible handler function
- Makes use of all the mg-web features
 - Stateless user sessions
 - Symbol table save/retrieve
 - RPC output converted to corresponding JSON
 - Background session garbage collection

Performance and Scalability

- Least possible path between incoming HTTP/REST requests and their handling in M code
 - No bottlenecks
- Massive scalability via industry-standard solutions for NGINX, Apache and IIS



VistA RPC Interface for mg-web-server



Maturity of Solution

- *mg-web* is being adopted as the alternative to *WebLink* for legacy applications used by some of InterSystems largest customers
 - WebLink is no longer supported in IRIS
- Mark Sires has been successfully using *mg-web* and *mg-web-server* for his products for many years



Making Sense of VistA's RPCs

- Huge list of RPCs that provide all manner of access to VistA's underlying functionality
- AI appears to provide a useful tool
 - See Augie Turano's talk

Building a Front End

- *vehu-mgweb* simply wraps access to VistA's RPCs as REST/HTTP calls
- How you use those REST calls, and the technologies you use are up to you



Availability of *vehu-mgweb*

- It's ready for use
- We've not yet decided how to make it available
 - Open Source?
 - Commercial license?
- Contact us if you are interested and want to discuss

More information

- Visit our Web Site
 - www.mgateway.com
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