IBM Consulting

# Windows and SQL Server Migration to Azure

Client Presentation

IBM **Consulting**

Azure

# Agenda

- Why Migrate to Azure?
- IBM Value Propositions for Migration Journey
- IBM Framework
- Migration Tools and Accelerators
- Incentives for Migration

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# What’s driving migrations to Azure?

Infrastructure oriented drivers

App oriented modernization drivers

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# Windows Server and SQL Server RUN BEST ON AZURE

## Unmatched security

- Get unified security management and advanced threat protection with Microsoft Defender for Cloud
- Proactively secure your server workloads with Microsoft Sentinel, a cloud-native SIEM
- Encrypt data while in use with industry leading confidential computing
- Enable secure and reliable connectivity between edge file servers and Windows Server on Azure with SMB over QUIC

## Cloud on your terms

- Bring Azure security, management and governance to any infrastructure with Azure Arc
- Seamlessly migrate your on-premises VMware and Nutanix environments with Azure VMware Solution and Nutanix Cloud Clusters on Azure
- Extend your on-premises systems to Azure with Windows Admin Center in Azure, Azure File Sync, Azure Active Directory, and Extended Network for Azure

## Outstanding offers and programs

- Save up to 80% with offers such as Azure Hybrid Benefit, 3 years of free Extended Security Updates, and reserved instances, only on Azure
- Save up to 93% when you move to Azure SQL Managed Instance
- Get industry leading price performance with SQL Server on Windows Server on Azure
- Get help at every step of your migration and modernization journey with the Azure Migration and Modernization Program

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# Unparalleled innovation for your Windows Server workloads

Automate configuration and management of Windows Server VMs with Azure Automanage

Patch without rebooting your Windows Server VMs with Hotpatch, only on Azure

Deep management of Windows Server in a familiar UI right from the Azure portal with Windows Admin Center in Azure

Gain flexibility and consistency with native .NET support in App Service and Azure Kubernetes Service

Get leading database performance from fully-managed, secure Azure SQL

Enable secure mode work by deploying virtual desktops and apps easily with Azure Virtual Desktop

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# Azure is the cloud that knows SQL Server best

The family of SQL cloud to edge databases

**SQL Server on Azure Virtual Machines**

Best for lift and shift and/or workloads requiring OS-level access

**Azure SQL Managed Instance**

Best for modernizing existing apps

**Azure SQL Database**

Best for supporting modern cloud apps

**Azure SQL Edge**

Best for extending apps to IoT edge

**Infrastructure-as-a-Service**

**Platform-as-a-Service**

**Edge Computing**

**Azure SQL enabled by Azure Arc**

Run Azure SQL on premises and in multicloud environments

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# Which Azure SQL offering is right for you?

## App Innovation

**Do you need**

- A database model?
- Resource pooling for multi-tenant SaaS?
- Up to 100TB of database storage?
- To automatically pause/restart a workload?

**Yes** → **Azure SQL Database**

**No**

## App Modernization

**Do you need**

- An instance model?
- On-premises SQL Server compatibility?
- Native vNet support & <16TB ?
- Near real-time data replication from on-premises to the cloud?

**Yes** → **Azure SQL Managed Instance**

**No**

## Migration

**Do you need**

- OS level access?
- Capabilities at the VM level?
- >16TB Storage?
- SQL Server versions 2008 - 2019?
- SSRS/SSAS?

**Yes** → **SQL Server on Azure VMs**

### Benefits of PaaS

- Lower administrative burden
- No End of Support hassles
- Fully managed and always up to date
- Dynamic resource scaling
- Built-in high availability and automatic backups
- Multimodel capabilities

### Benefits of IaaS

- Maintain OS-level control
- Easy lift-and-shift eliminates app refactoring
- Faster path to the cloud

** Use Azure Arc to enable the same services in your datacenter or on the cloud of your choice, when a hybrid or multicloud approach is required*

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# Your business intelligence tools in Azure

## Move to Azure VMs or choose managed services for data integration and analysis

**SSIS**
Your solution for building **data integration and transformation** solutions

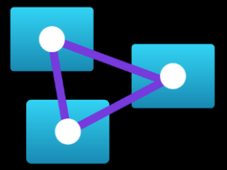
→ Azure Data Factory (ADF) SSIS

**SSRS**
Your platform for creating, deploying, and managing mobile **paginated reports**

→ Power BI (PBI)

**SSAS**
Your service for creating and analyzing **multidimensional data models**

→ Azure Analysis Services (AAS)



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# IBM Value Propositions for Migration Journey

IBM's Cloud Migration Service offerings help our clients accelerate modernization initiatives, **reduce technical debt, protect legacy investments, while minimizing business risk and improving business agility** by moving their workloads to the cloud faster, cheaper, and more efficiently through a combination of:

- **Automation** powered by assets such as **IBM Cloud Consulting Accelerator**
- **Data analytics and insights** through IBM's deep expertise in AI and ML models/services
- Augmented by assets from **Neudesic and IBM Research**
  **Dedicated** Azure Migration Factory experienced in cloud native migration tools
- Staffed with **certified** professionals
  **Sustainability by design** -Target environment is right sized, and our architecture is optimized to reduce energy consumption. Under-utilized application components are either optimized or decommissioned.

**80%** effort savings in the Discovery phase

Automation and pre-defined Discovery patterns enable these savings over traditional methods

**40%** cost savings in migration design

Accelerate modernization initiatives, reduce technical debt, while minimizing business risk and improving business agility

Enabled by pre-defined design patterns

**25%** faster delivery of migration outcomes

Enabled by 'Migration-as-a-Code' utility and 200+ pattern libraries in execution

**20%** reduction in business risk

Enabled by well defined pathways to application modernization

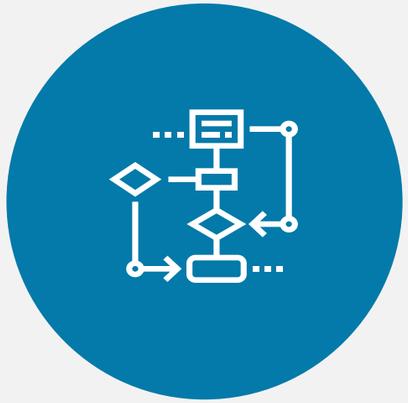
**30+%**

optimizing savings and equivalent carbon credits

# IBM Value Propositions for Migration Journey

**40% More Cost Effective**

With economies of scale and proven processes

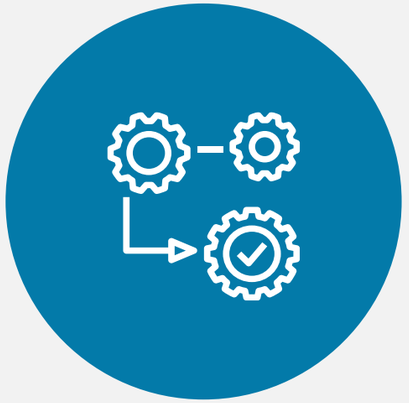


**60% Faster Time to Value**

Leveraging heavy automation and established templates

**Reduced Delivery Risk**

With proven frameworks backed by 10,000+ development hours



**Single Team, Agile Delivery Model**

Disciplined delivery with a geographically aligned team to reduce errors

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# IBM Framework & Tooling for Windows Server Migration to Azure

**Objective:**
Understanding the inventory of the current windows server workloads in Physical/ VMware/Hyper-V Platforms

**Tooling :**
**Automation:**
- Azure Migrate
- Delivery Curator
- Movere

## Discovery

**Objective:**
Analyse migration parameters.

**Key Factors:**
- Windows OS Version
- Latency & Performance
- Desired Security, Firewall
- Application dependencies

## Analyse

**Objective:**
Migrate the source Physical Servers/VMs/Hyper VM Windows Servers to cloud.

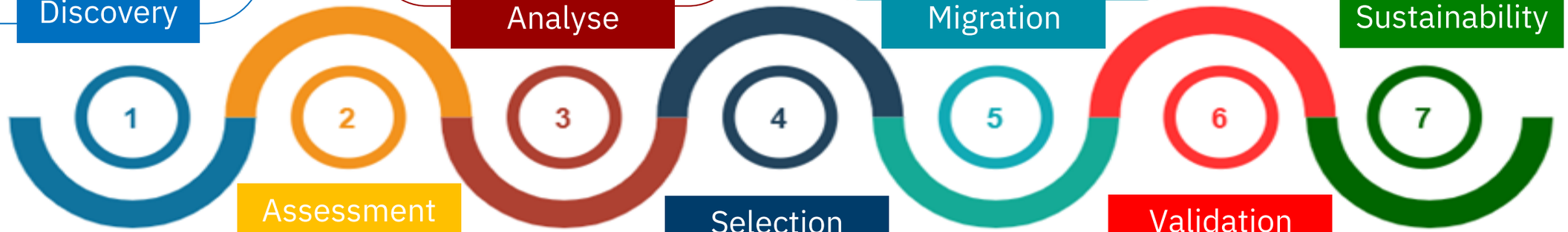
**Tooling :**
- Azure Site Recovery
- Calidris
- Azure Migrate

## Migration

**Objective:**
Optimize and right size the VMs to reduce carbon footprint

**Tooling :**
- Azure Sustainability Calculator
- Azure Well Architected Framework
- Turbonomic
- Sustainability Advisor

## Sustainability




Windows Server

## Assessment

**Objective:**
Assess target migration compatibility.

**Tooling :**
- Azure Migrate
- Movere
- Kahuna
- Delivery Curator

## Selection

**Objective:**
Based on the key factor and Business driver analysis, select the target landing zone, size of VMs, availability set and OS Disk

## Validation

**Objective:**
Performing cut-over validation post migration

**Tooling :**
- Azure Site Recovery
- Calidris
- Azure Migrate

Microsoft Azure

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# IBM Framework & Tooling for SQL Server Migration to Azure

**Objective:**
Understanding inventory of the current database server workloads

**Tooling :**
**Automation:**
- Azure Migrate
- Azure Service Map (Agent)
- Delivery Curator

## Discovery

**Objective:**
Analyse migration factors.

**Key Factors:**
- DB Migration Compatibility
- Tooling support for Migration
- Cumulative Database sizes
- Database Integrations
- Desired Security
- Resiliency Patterns

## Analyse

**Objective:**
Migrate the source databases to target SQL Landing zone

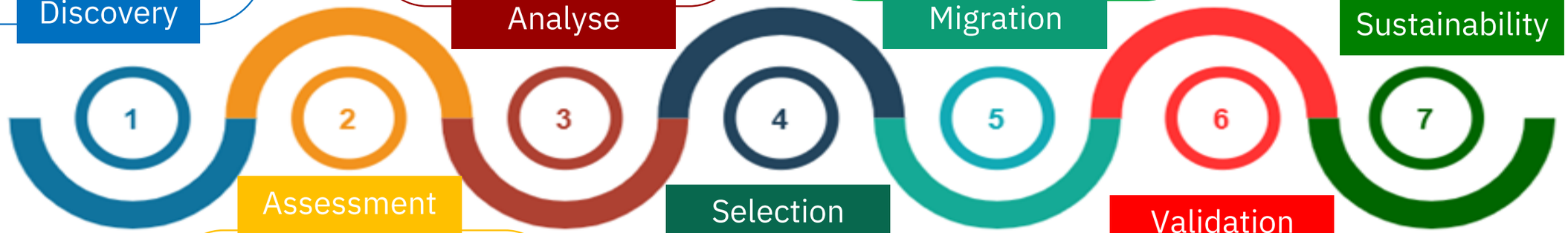
**Tooling :**
- Database Migration Assessment
- Database Migration Service (DMS)
- Azure Data Factory bulk copy data
- Azure Devops ( Bacpac )
- SQL data sync
- Kinisi, Calidris

## Migration

**Objective:**
Optimize storage and database usage, reduce carbon footprint

**Tooling :**
- Azure Sustainability Calculator
- Azure Well Architected Framework
- Turbonomic
- Sustainability Advisor

## Sustainability




Microsoft® SQL Server®

## Assessment

**Objective:**
Assess target database migration compatibility

**Tooling :**
- Azure Migrate
- Database Migration Assessment (DMA)
- Database Migration Service (DMS)
- Kahuna

## Selection

**Objective:**
Based on the key factor and Business driver analysis, select the target DB landing zone.

## Validation

**Objective:**
Performing cut-over validation post migration

**Tooling :**
- Database Migration Service (DMS)
- SQL Server Management Studio (SSMS)

SQL

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# IBM Tooling Strategy – IBM IPs

We leverage best of Azure tools and IBM IPs. We differentiate through our IBM research, consulting & acquisition tools.

**Accelerators for SQL/ Windows Migration**

**IBM Consulting Cloud Accelerator**

A revolutionary cloud acceleration platform that drive accelerated planning and low-touch execution, with consistent & predictable outcomes.

### BlueCAT

Help clients to map their transformation journey

### Cloud Transformation Insight (CTI)

Provides deeper insights in client applications,

### RedHat Migration Toolkit

Can analyse 1000s of Java applications. Recommends suitable runtime.

### Calidris

Automates rehost pattern for Windows, Linux, Hyper-V and VMware to Cloud

### Kahuna

Economic Impact Place. Creates wave plan. Estimate Support Cost

### Turbonomic

Discovers workload and provides right sizing.

### Cloud Transformation Advisor (CTA)

Assess J2EE application migration to WAS, JBoss and WebLogic

### Arina

Provides infrastructure and application management tool to provision virtual desktop.

### Dream Advisor

Accelerate Data/AI workload optimization decisions

### Delivery Curator

Performs discovery analysis on infrastructure for affinity, Utilization, etc.

### Kinisi

Replatform OLTP & OLAP. Support multiple data & Schema migration patterns

### Move2Kube

Supports Re-Platforming of Java, Cloud Foundry, Swarm, Docker to Kubernetes and Open Shift.

**Design** | **Discover, Assess & Design** | **Execute**

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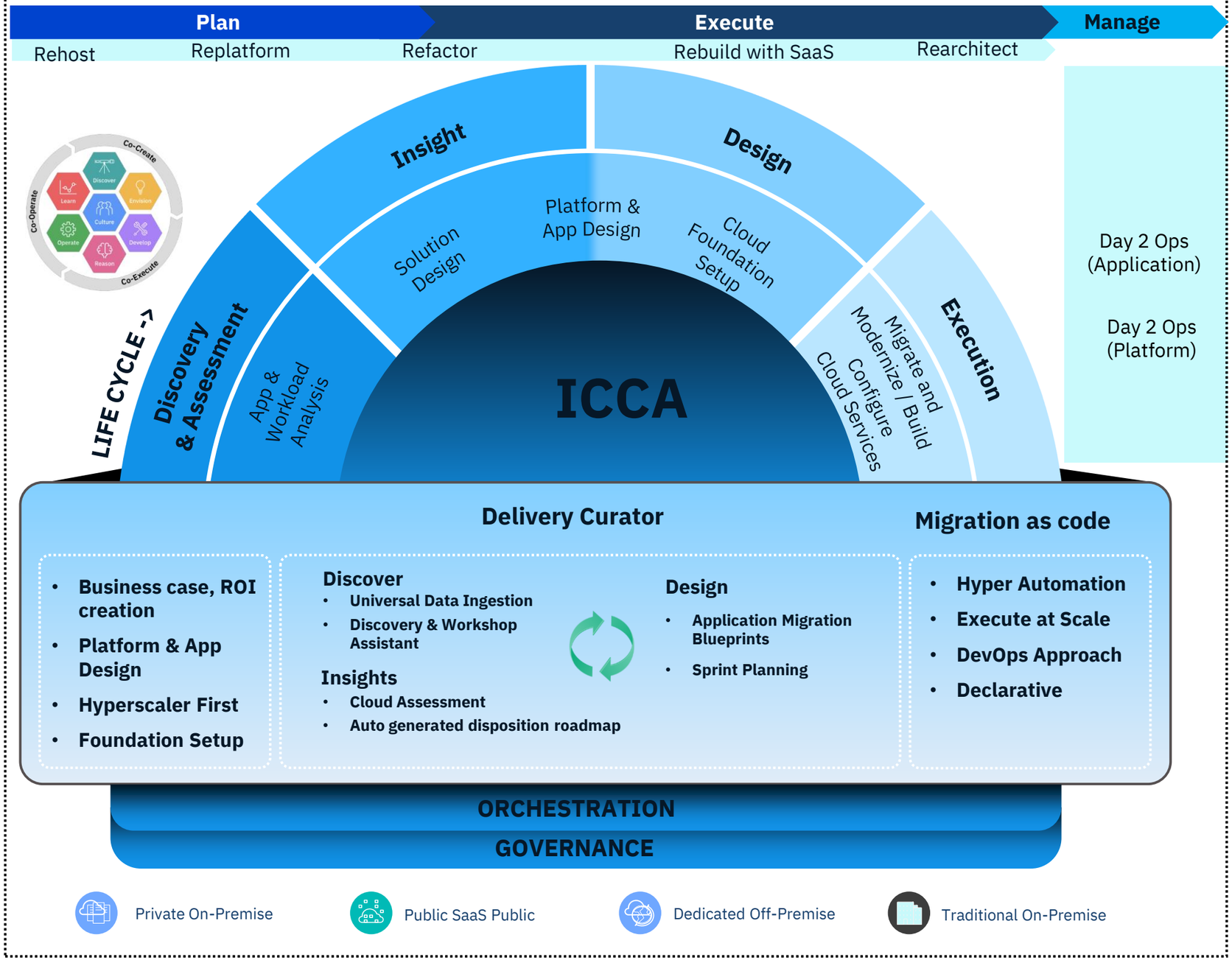
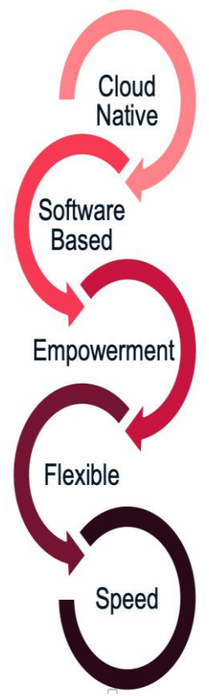
# IBM Consulting Cloud Accelerator (ICCA)




## Design Principles




- Reduced delivery risk with Data Analytics & Insight tool backed by 10,000 dev hours & 125+ engagements
- Incorporates Well architected framework
- Delivered by Hyperscaler Migration Factory
- Strategic partnership with hyperscalers, partners
- Powered by IBM Research, IBM Security & Acquisitions (Nordcloud, Taos, Neudesic, Turbonomic)
- Hyper Automation - Declarative & Continuous Automation in collaboration with IBM Research
- Enables Sustainable & secure Migration, Modernization experience for clients

## Key Benefits

**80%** *Increase in efficiency during discovery leveraging automation & proven patterns*

**40%** *More cost-effective leveraging pre defined design patterns*

**25%** *Faster migrations with proven frameworks and 200+ pattern libraries in execution*

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