



PERPETUAL REALITY
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Reality Framework
Getting Started
Product Overview Guide

Welcome to the Reality Framework, a suite of tools built to simplify your SharePoint ecosystem.

What is the Reality Framework?

Simply put, the Reality Framework adds a set of JavaScript functions to the SharePoint page which determine the location you've configured as your CDN host, then leverage native SharePoint functionality to fetch your customizations to the browser, anywhere you turn it on.

The framework refers to this location as your Artifact Repository and pulls reusable SharePoint customization & enhancement artifacts from it (i.e. JavaScript, HTML, CSS, images, etc.). This is typically a central SharePoint document library, but can live on any CDN platform, anywhere accessible by your clients' browsers (http or https).

At installation, the Reality Framework refers to the Artifact Repository for both centralized artifacts (intended for all your SharePoint sites/web applications), and site collection specific artifacts (intended for only *one* domain name or site), like a specific brand for an extranet or HR site collection, as an example.

Who developed the Reality Framework?

The Reality Framework was developed by the core team of SharePoint Architects, Developers, and Administrators at Perpetual Reality with the goal to streamline product development and deployment cycles implementing a simplified, reusable and scalable deployment framework.

With over a decade of experience in custom development and implementation methodologies for every version of the SharePoint products and technologies, Perpetual Reality has 'bled in the trenches' with the various prescribed methods over the years. As such we believe in delivering quality products and services that enable rapid, reusable, code development, delivery and distribution at massive scale. We strive to empower a simplified implementation methodology based for future focused SharePoint customization with familiar tooling and CDN technology models powered by the modern toolchain of tomorrow.

Perpetual Reality leads the space with simplified and accessible implementation tactics on a wide variety of SharePoint platform architectures. Additionally offering integration services and capabilities for platforms such as Office365, Azure, Amazon Web Services, Google Analytics and Compute platforms.

The focus of our Practice(s) also include Microsoft infrastructure architecture spanning on-prem, cloud and hybrid constructs. This provides the depth and breadth in the Microsoft product space to set Perpetual Reality apart throughout their various markets.

Why does the Reality Framework exist?

SharePoint analytics and customizations have struggled over the years to find simple implementation methodologies that can deliver at scale. Historically, SharePoint customization practices have involved heavy tooling to construct, and static file delivery for deployments that don't distribute well at scale. Additionally, past practices for solution delivery commonly require files be repeatedly loaded into memory space wasting precious resources on already expensive and ever expanding platforms.

The Reality Framework resolves this through the use of a Code Distribution Network (CDN) model eliminating wasted resources as platforms continue to collapse to Hyper Converged, hybrid, shared and cloud infrastructure architectures. This results in exponential implementation and infrastructure cost savings while empowering rapid product development capabilities that still adhere to the security and governance structures of classic product design.

With the Reality Framework, on-prem SharePoint implementations can now iterate code development at the speed of cloud, matching the release cadence of their cloud platform counterparts and integrated products. Hosted SharePoint implementations and Office365 SharePoint online can now span customizations from on-prem and vice versa, while aligning to a common reusable code distribution library model and easily scaling to the cloud.

Today's IT organizations are looking to future proof their hybrid technology footprint. The Reality Framework was designed for organizations of any size desiring to realize the ROI and time to delivery benefits of agile software lifecycle methodologies and DevOps culture. Implemented correctly, these methodologies enable cost minimization while involving core business stakeholders into a rapid product development cycle.

The Reality Framework natively accommodates these lifecycle patterns for SharePoint (a platform historically devoid of rapid product development) by plumbing reusable code distribution capabilities directly into the SharePoint ecosystem.

When should I consider the Reality Framework?

The Reality Framework is designed to target the following scenarios:

- You need analytics beyond what SharePoint can offer, or specifically want Google Analytics and Tag Manager, or Captcha integration.
- You need to distribute SharePoint site customizations to one farm, multiple farms, or Office365 rapidly via a one click deployment model
- You are tired of lengthy SharePoint deployments with excessively large SharePoint solutions
 - Custom brands, custom managed code elements and user controls are classically a problematic area
- You want to focus customizations to aligning with Microsoft recommended go forward best practices and client side technologies such as the SharePoint Framework (SPFx) and modern toolchain.
- You want site collections throughout your organization to leverage different feature sets of **common** customizations with one click rapid deployments

- You want to take advantage of the Reality Tools: FORGE, or FOUNDRY capabilities (our subscription based enhancement and customization tools).

When can I install the Reality Framework?

The Reality Framework doesn't deploy any intrusive code elements or dependencies and as such can be installed at any time before, after, and in addition to/parallel with your existing solutions. Many install this after they have gone live with existing implementations.

The only caveat being that the Reality Framework relies on a SharePoint enabled master page (this is running on SharePoint after all).

Installation Models?

The Reality Framework can be implemented with either the SharePoint solution or Add-In (a.k.a App) models.

The Solution Gallery or Add-In models are the only choices for Office365 SharePoint Online sites. However, on-prem SharePoint implementations can optionally leverage the SharePoint solution construct via either the Farm or Site Collection solution gallery deployment scope.

Similar to the Add-In model, the Site Collection solution adds the framework to only a single site collection, whereas the Farm solution provides the included SharePoint features to **all** site collections, on **all** web applications in a farm with a one-time deployment effort. Then you can choose where to turn the included features on or off.

What are these features you are referring to?

Effectively, the Reality Framework is comprised of 4 SharePoint features. These 4 features leverage the Microsoft recommended best practice called declarative custom actions. Each action is a 'scriptblock' custom action type that places the Framework's JavaScript into the page that is delivered to browser (via declaration). Finally, the 4 features execute their logic as follows:

- **Reality.Artifact.Repository Definition**
 - Read the browser address bar to understand where user is browsing
 - Read the site collection property bag to gather managed information (i.e. Artifact Repository CDN location, Google Analytics ID, Tag Manager ID, etc.), and setup defaults if blank
 - Establish the Artifact Repository as JavaScript variable & provide it for the rest of the framework

- **Reality.Artifact.Core Inclusion**
 - Fetch the enterprise common, JavaScript function library definition file
 - Fetch the web app or site collection specific, JavaScript function library counterpart file (if exists)
 - Fetch the enterprise common, JavaScript plugin inclusion definition file
 - Fetch the web app or site collection specific, JavaScript plugin inclusion counterpart file (if exists)

- **Reality.Tools.Foundry**
 - Fetch the Enterprise FOUNDRY function library definition file for application functions defined by you
 - Fetch the Reality.Tools.FOUNDRY function library to provide Reality Tools for subscribers

- **Reality.Tools.Forge**
 - Fetch the Enterprise FORGE function library definition file for application implementation defined by you
 - Fetch the Reality.Tools.FORGE function library to provide Reality Tools function call prototypes and tool lookups for advanced tool subscribers.

How do I get my hands on the Reality Framework and get it installed?

The Reality Framework is free of charge and available from our website's download page. Simply choose the installation method that suits your enterprise best then download from here:

<http://www.perpetualreality.com/downloads.html>

We have also built a quick install guide to get you started with the simple 3 step installation process. You can grab the guide here:

<http://www.perpetualreality.com/RealityFramework.html>