Enterprise / Infrastructure Architecture Guide

'Much like in a game of Tetris, as imperfect fit falls on upon imperfect fit, the risk piles up and the potential cost to the business grows ever larger,'

Introduction

The TCDC Enterprise Architecture Guide (EAG) documents architectural principles and goals, the current state of TCDC enterprise architecture, and a future state architectural vision that supports the overall Digital Strategy. Since this document serves to inform business owners about available enterprise tools and services. Because this is a constantly evolving document, community feedback will drive future versions, expected to be updated on a yearly basis.

Project Teams: can use the EAG to gain an understanding of the current architectural landscape, the future vision of the enterprise architecture, and the services available. By understanding the recommended technical standards and available TCDC services, project teams can re-use existing services and create applications that fit into the long term architectural vision. Teams can also leverage the information to develop new enterprise-wide services.

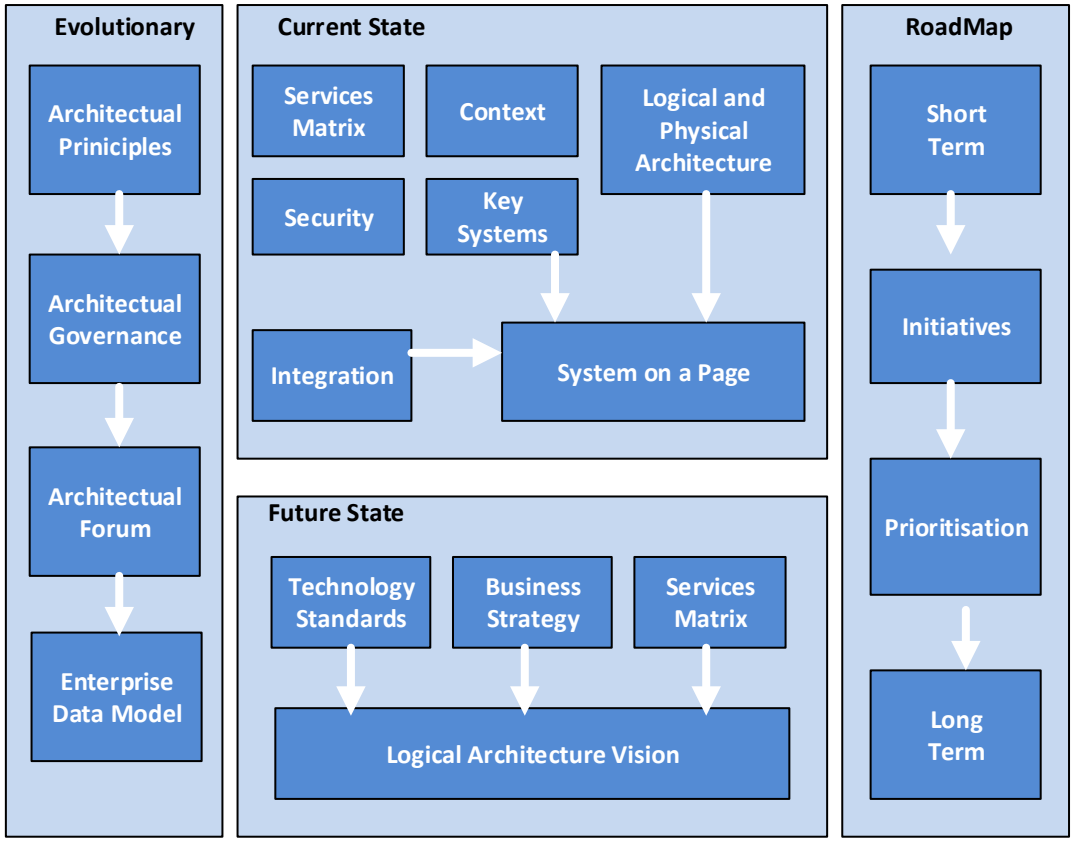
Project Sponsors: can benefit from the EAG by gaining an understanding of the technical direction of TCDC as well as the Architectural Governance Process. This knowledge can then be used to shape their decisions regarding IT investments.

How to use the EA Guide
The EAG is divided into the following sections: Introduction, Context and Principles, Current State, Key Systems Overview, Future State, Governance, and Moving Forward. As a user of the EAG, you can read it in its entirety or reference a particular section that pertains to your need.

Whom to Contact with Questions
While the Enterprise Architecture Guide provides a breath of knowledge on the Enterprise Architecture at TCDC, it may not contain answers to the queries you have. If you have specific questions regarding items presented in this guide you can contact the Head of IT or the Infrastructure Architect

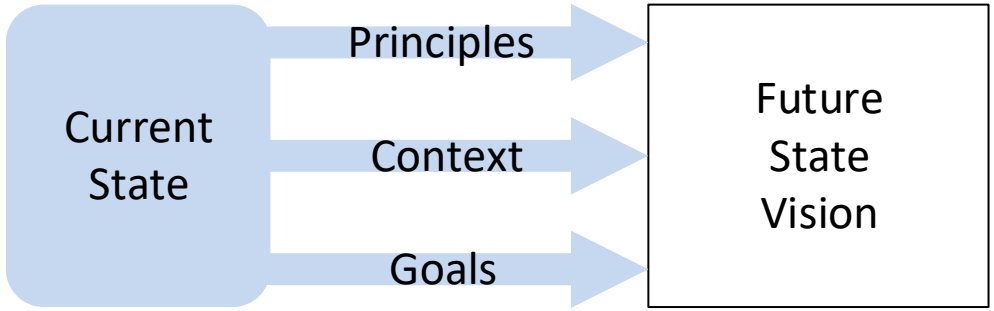
Enterprise Architecture Block Diagram
The Enterprise Architecture Block Diagram shown below displays the various artifacts necessary to outline and detail TCDC's Current and Future Enterprise Architecture. The diagram outlines the relationships and flow between these artifacts and is meant to be provide context for users of this Guide.
As shown below, the EA Guide Block Diagram is broken into 4 Sections:

Current State, Future State, Evolutionary and Strategy Implementation (the High Level Road Map is part of this Guide and is used as a working model for the Future State).



Context and Principles

The following statements are intended to represent the business and technology landscape for the next three to five years. Thus, these items must be considered when discussing the future state vision.



Future State Context:

1. Pathway will continue to be the primary compliance system;
2. A service will be delivered to allow querying across all major TCDC repository's for administrative data that is of interest to multiple departments
3. Our user community will be based throughout the region, and will require 24x7 access to our systems; the definition of the TCDC community will continue to evolve
4. There will be increased integration between All TCDC systems
5. The TCDC environment is heterogeneous
6. The TCDC network will evolve to support needs of the business; we will have many networks, we will have an IPv6 network and we will need to differentiated services to better support user needs

Goals

- Business rules and processes for accessing data will be well documented
- We will have an Enterprise Bus to query and update multiple repositories
- All applications will be Web Based
- We will eliminate complexity in the Infrastructure
- Build services and a platform to support the overall Digital Strategy
- We will have a clear definition of what our IT environment is but it may be complex with many parts

***A system of record (SOR) or Source System of Record (SSoR) is Data Management term for an information storage system that is the authoritative data source for a given data element or piece of information*

Principles

Principles are intended to be simple statements of concepts that can be easily remembered, and used to guide the choice of business applications to evolve and improve the Enterprise Architecture.

Security: applications should ensure data and access security
- Sensitive data must be protected in storage and in transit
- People should have single identity to all enterprise applications
- Usernames should be consistent across applications

Ownership: clear and explicit ownership of business data
- All data entities should have a single identified system of record
- Systems should fulfill their custodial obligations for data they are the system of record for**

Leverage assets: leverage existing services and capabilities
- Leverage capabilities in our existing investments where appropriate (Pathway, Simplivity)

Accessibility: be aware of needs of all users (location & disabilities)
- Applications should be accessible from anywhere by anyone

Standards: promote consistency using standards
- All new enterprise applications should adhere to recommended technical standards
- Use of open source tools and specifications where appropriate

Architecture Governance

What is the Purpose of Architecture Governance?
To introduce checkpoints at various stages of IT projects to ensure that the changes will not adversely impact on the Production environment and that all components meet TCDC standards and comply with policies.

How can ITAF assist you?

- Architecture is reviewed by the IT Architecture Forum (ITAF)
- Assistance in leveraging the existing architecture
- Proactively identify IT risks to the project
- Provide business-wide IT context to project team
- Facilitate access to data from system of record
- Identify opportunities for leveraging IT resources

Maintain the integrity of TCDC's IT environment and expand the user community's access to TCDC resources

- Does the project present risk to the IT environment (e.g., infrastructure, other applications, users, or policy)?
- Allows ITAF to proactively recognize when modifications to the architecture are required
- Allows the project team to provide input to the extension of the TCDC architecture
- Does the project leverage the existing common services where applicable?
- Provides cost effectiveness across TCDC IT systems, or Provides integration benefit (e.g., single sign-on)

Project Documents Required

- Concept Review
- Detailed Design
- Detailed Implementation Plan
- Hand Over to Production
- Change Control

Concept Review

The Concept Review is a review of IT architecture at the beginning of the plan/design phases of a project, to help ensure a successful project implementation into production. This review also ensures that the proposed system fits into the existing TCDC environment as well as the future architectural vision.

Design Review

The Design Review includes the detailed design plan of the project from an IT perspective and is done to ensure that the implementation meets TCDC's standards, should include the requirements for the DEV/TEST Environments, also includes the first draft of the Hand Over to Production Template (HOP).

Solution QA

The Solution QA includes the detailed Implementation plan of the project from an IT perspective, a draft change control document, and the final draft of the HOP document.

Change Control

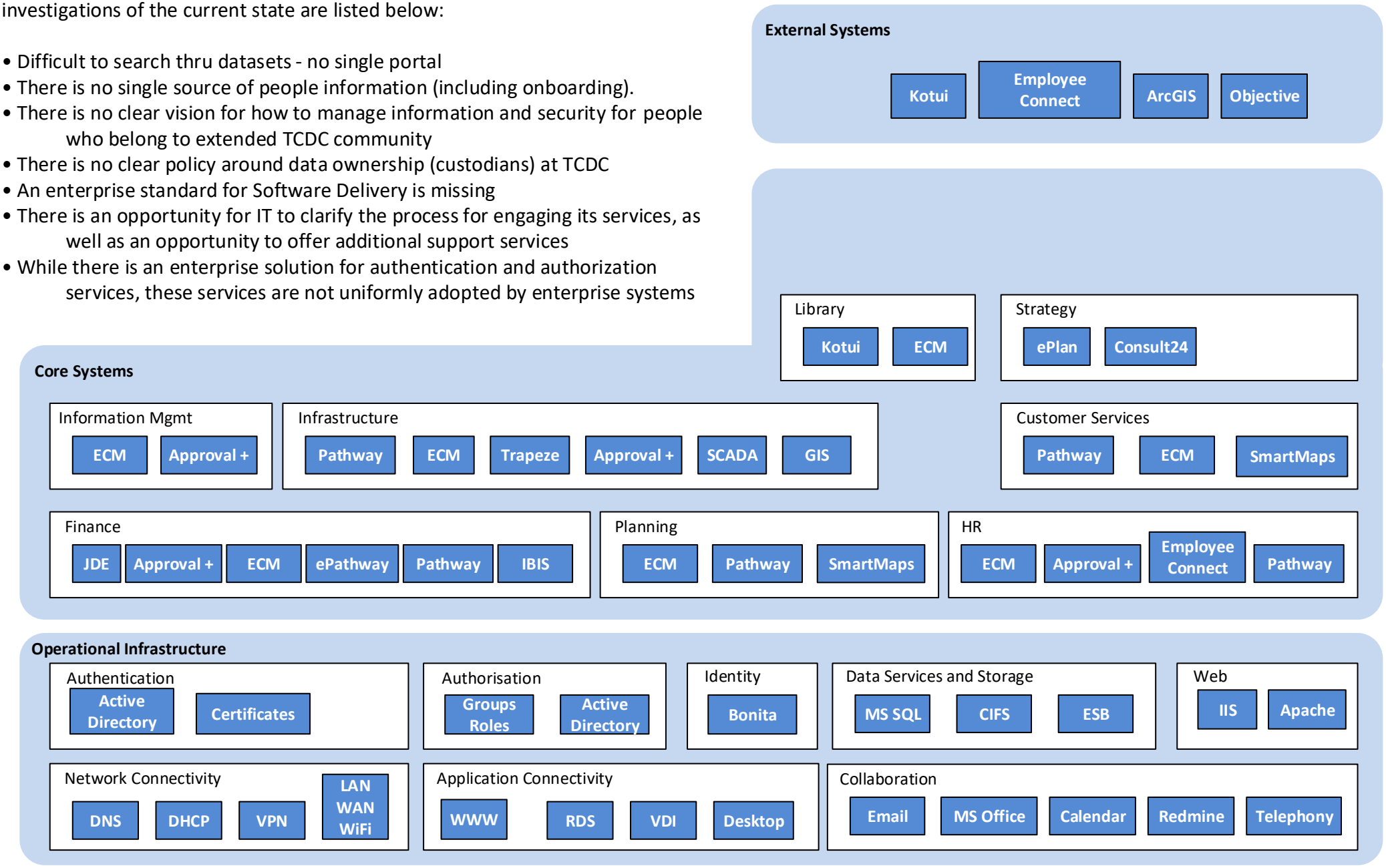
Raise a Redmine Change Control for all components affecting the Production Environment

PLAN/DESIGN → **DEV/BUILD/TEST** → **UAT** → **LIVE**

Current State Summary

System context diagram is shown here to highlight the core services that make up all Information Systems at TCDC. Key themes that emerged from the initial systems investigations of the current state are listed below:

- Difficult to search thru datasets - no single portal
- There is no single source of people information (including onboarding).
- There is no clear vision for how to manage information and security for people who belong to extended TCDC community
- There is no clear policy around data ownership (custodians) at TCDC
- An enterprise standard for Software Delivery is missing
- There is an opportunity for IT to clarify the process for engaging its services, as well as an opportunity to offer additional support services
- While there is an enterprise solution for authentication and authorization services, these services are not uniformly adopted by enterprise systems



Current Physical Network

This diagram represents an overview of the current physical TCDC Network Topology.

Thames: Core Site Located in MacKay St that hosts all of the Virtual Infrastructure, the Storage Systems, Telephony System, the DEV and TEST Environments, the Wide Area Network Concentrator , Public Accessible Servers (DMZ) the Perimeter and Internet Access.

Auckland: DR Site hosting copies of all Production Servers

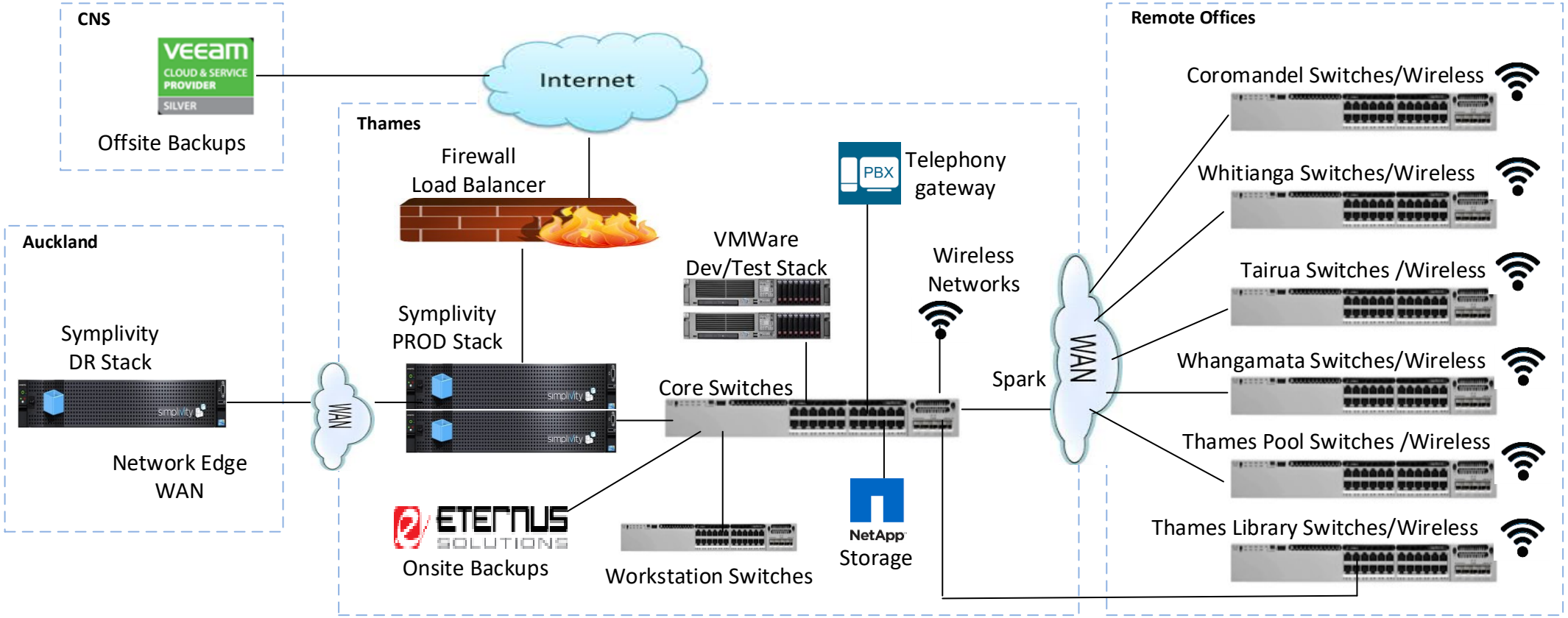
Remote Offices: Area Offices containing Switches, Routers and Wireless Access Points to allow access to Cores Services in Thames (No Data Stored Here).

CNS: Offsite Backups of All Production Systems

There are many more ancillary Systems that hang off and have connectivity to this network but this diagram represents the Core Infrastructure

Symplivty Platform: A HyperConverged Platform located in Thames Hosts all the Production Servers and has backups shipped to the DR Node Every Night – these can be spun up at any time to provide access to TCDC Services in the event of a Disaster – However there is still some work to be done in the Auckland Datacenter to support automatic switching to DR Mode.

Currently we also have Offsite Backups Located in the Cloud (CNS) to provide a belt and braces protection in the event of a Symplivity Failure.



Current Logical Network

This diagram represents an overview of the current logical TCDC Network Topology (No DMZ resources).

Layer3 Core: This is the primary place where all VLAN Routing occurs for the virtual Infrastructure and for any external devices / Sites and the Internet

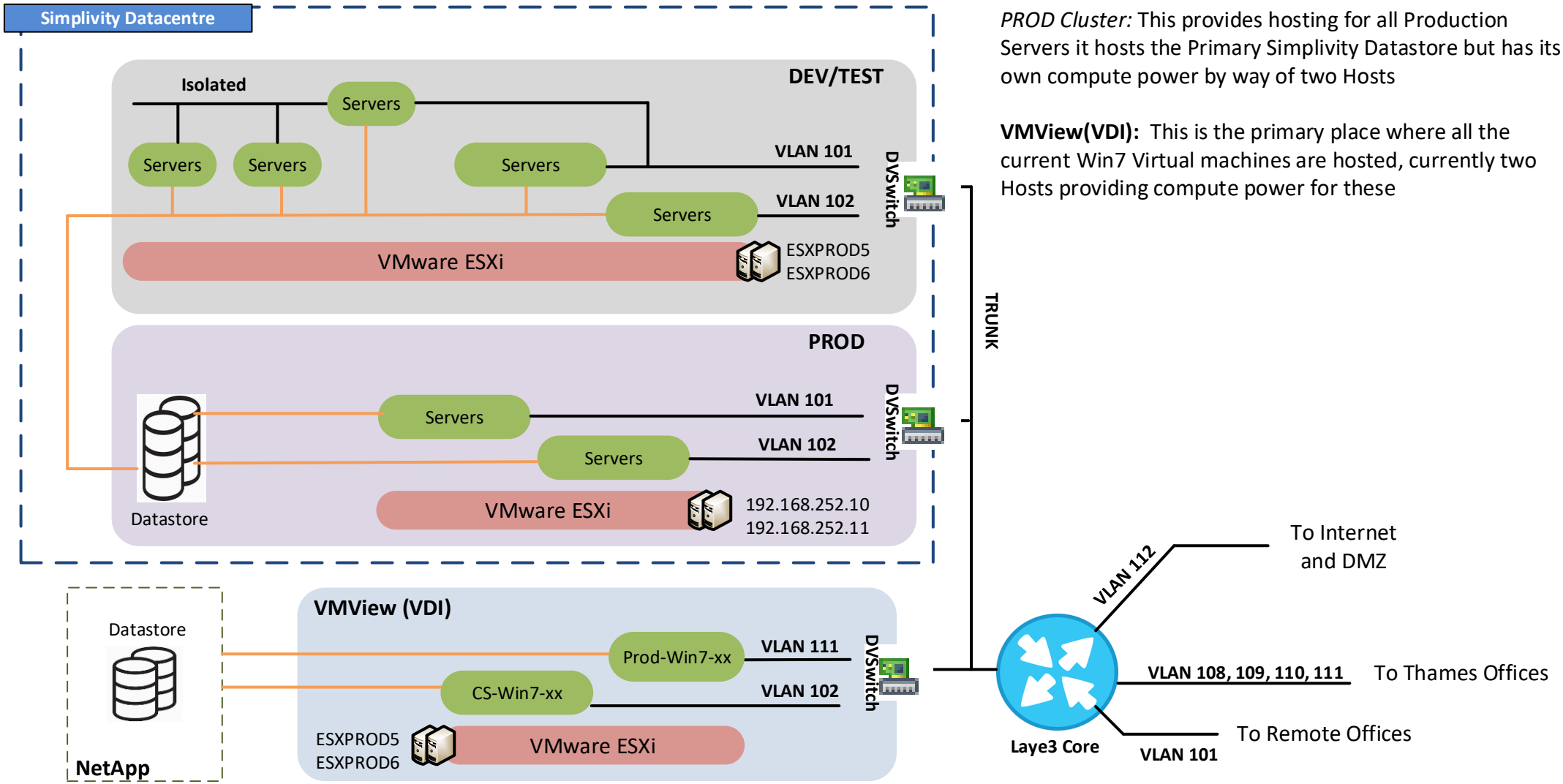
NetApp: Contains the Datastore for the remaining VDI machines

Simplivity Datacentre: This is made up of two Logical Cluster sections

DEV/Test Cluster: This provides hosting for all Development and Test basic Servers it shares the Primary Simplivity Datastores but has its own compute power by way of two Hosts

PROD Cluster: This provides hosting for all Production Servers it hosts the Primary Simplivity Datastore but has its own compute power by way of two Hosts

VMView(VDI): This is the primary place where all the current Win7 Virtual machines are hosted, currently two Hosts providing compute power for these



Current DMZ Network

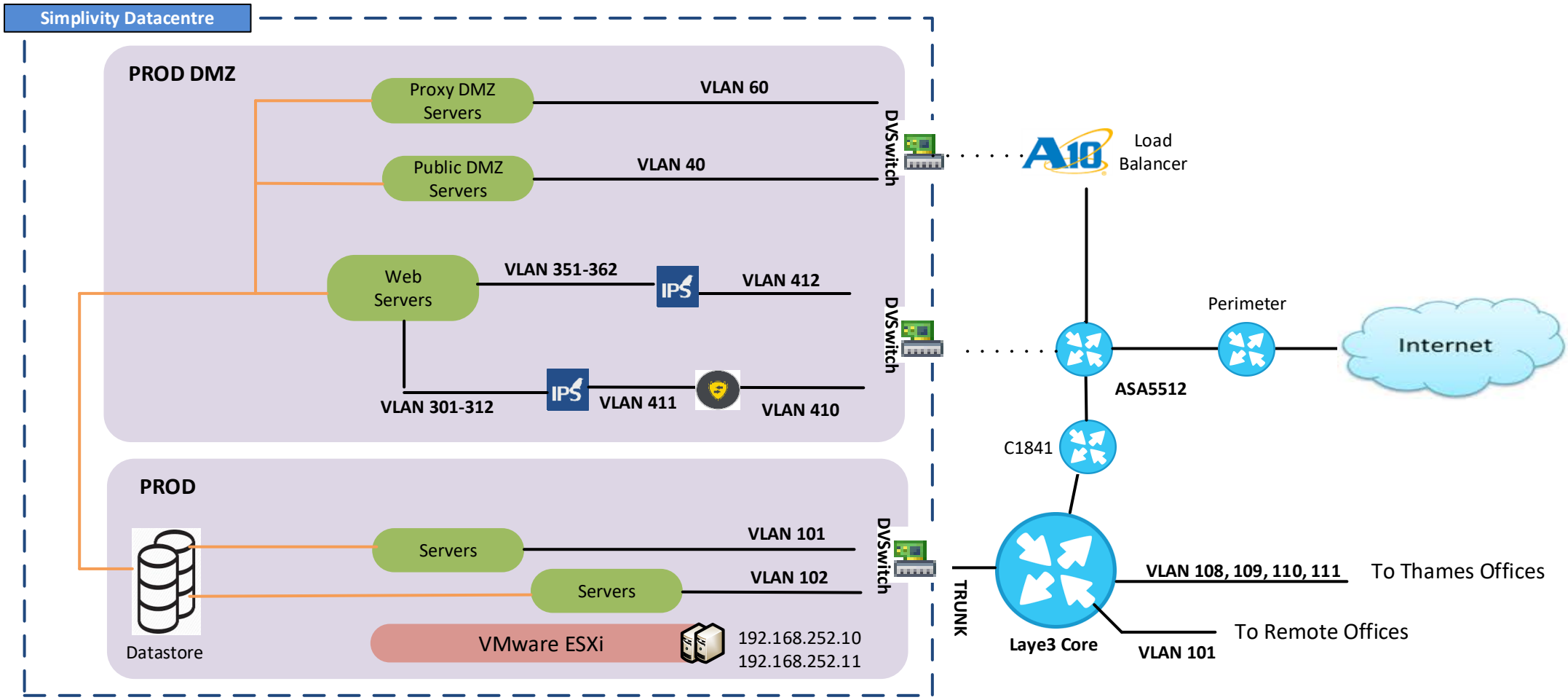
This diagram represents an overview of the current logical TCDC Network DMZ Topology. All DMZ servers are contained within the Simplivity Platform and utilise VLAN routing to connect to the Core Firewall and Load Balancer.

Layer3 Core: This is the primary place where all VLAN Routing occurs for the virtual Infrastructure in the Production DMZ

ASA5512: This is the Core Firewall providing rules and IPS for all VLANs routed thru this point.

A10 Load Balancer – Provides Application Delivery load control for public web apps.

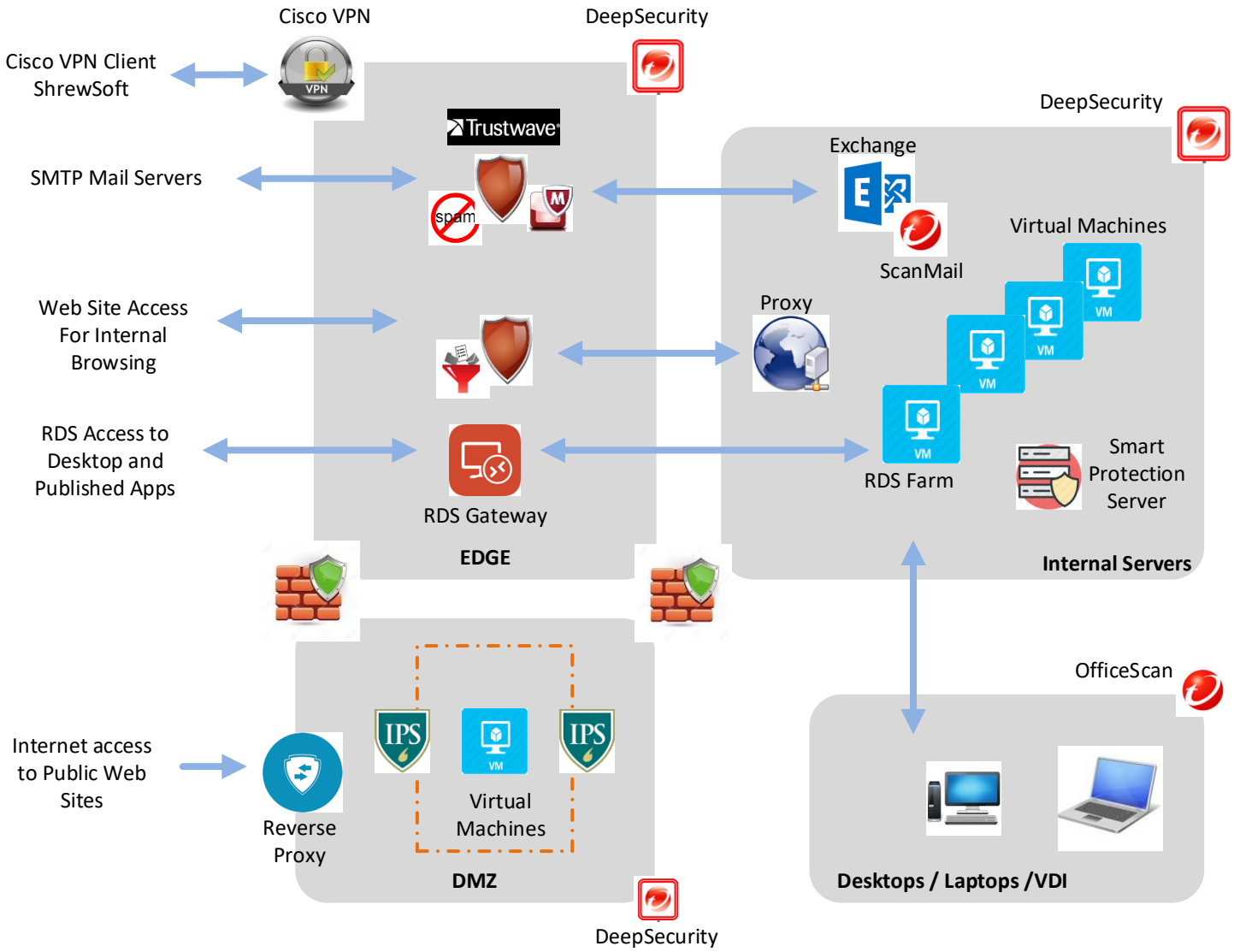
Perimeter – router to allow connectivity to the Internet



Current Security Overview

This diagram represents an overview of the current logical TCDC Network security topology. The basic concept here is that virtual machines are grouped in Containers, these containers are protected by Trend Micro Deep Security, traffic must cross a firewall to move between containers. The Edge network contains services for Email, Web Browsing and external Access, where the DMZ contains public accessible Web Services.

Continues Monitoring involves ongoing assessment and analysis of the effectiveness of all security controls described here, updates of various products as advised by vendors to provide best coverage vs cost. Many layers and different products provide a difficult landscape for would be intruders to navigate.



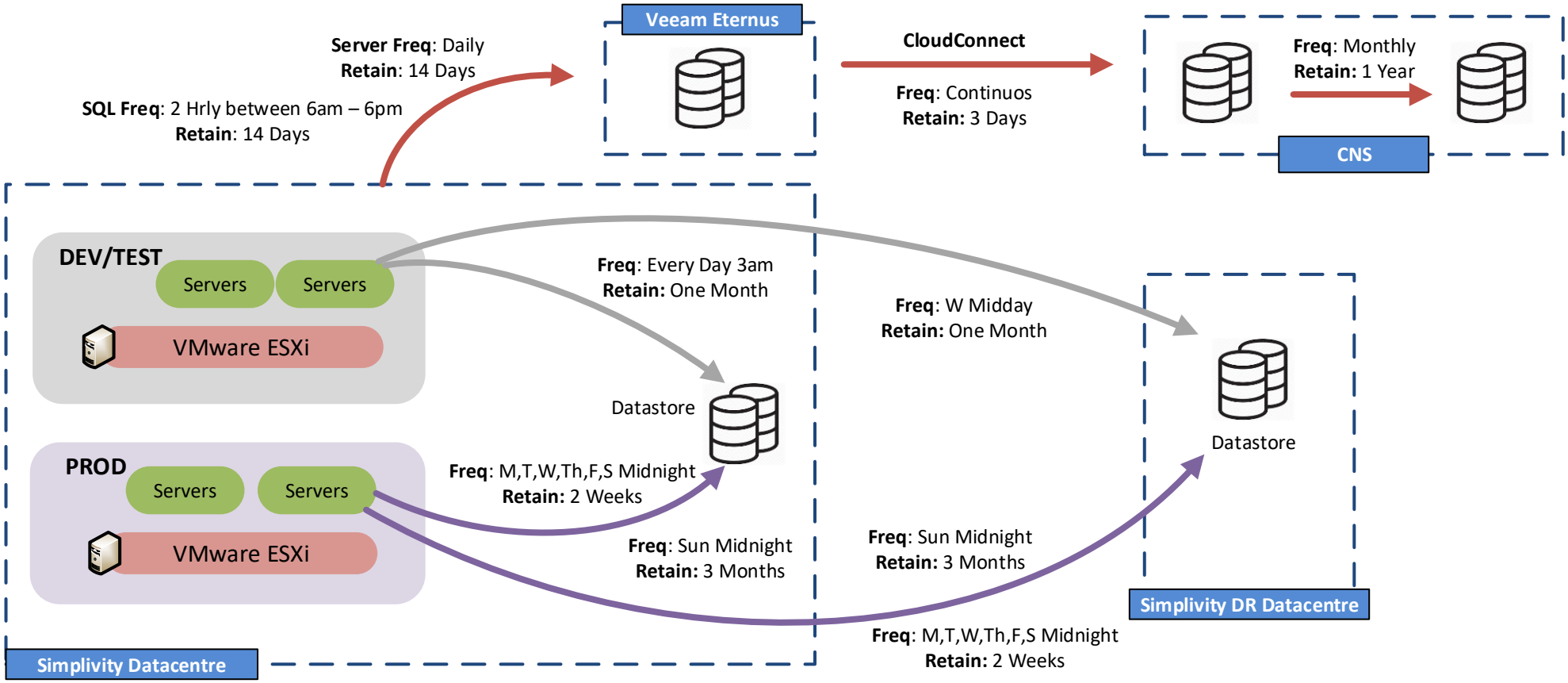
Legend

- SPS provides a repository of file reputation virus/malware threats and verified web reputation threats
- Intrusion Prevention System to protect from unwanted access
- Firewall with IPS to detect and block unwanted traffic
- Trend Deep Security applied to ESXHosts to Monitor Malware and web Intrusions on all VM's
- Trend Office Scan and ScanMail to Protect all non VM's and Mailboxes from Malware
- Mailmarshal to clean and protect email from SPAM and Viruses
- Webmarshal to protect browsing traffic from malware and hijacking
- VPN to provide secure access
- RDS Gateway to Protect remote user RDS Desktop Traffic
- Reverse Proxy provides responses on behalf of web Services

Current DR and Backup Overview

This diagram represents an overview of the current logical TCDC Backup and DR topology. The basic backup concept here is that VM's are backed up using Veeam to Local Eternus storage and Simplivity Backups are sent to the DR Datacentre to be used to stand up the Whole Production Environment in the event of a complete Site Outage at Thames. Veeam and CNS solution will be scaled down once Simplivity Backup features are fully realised.

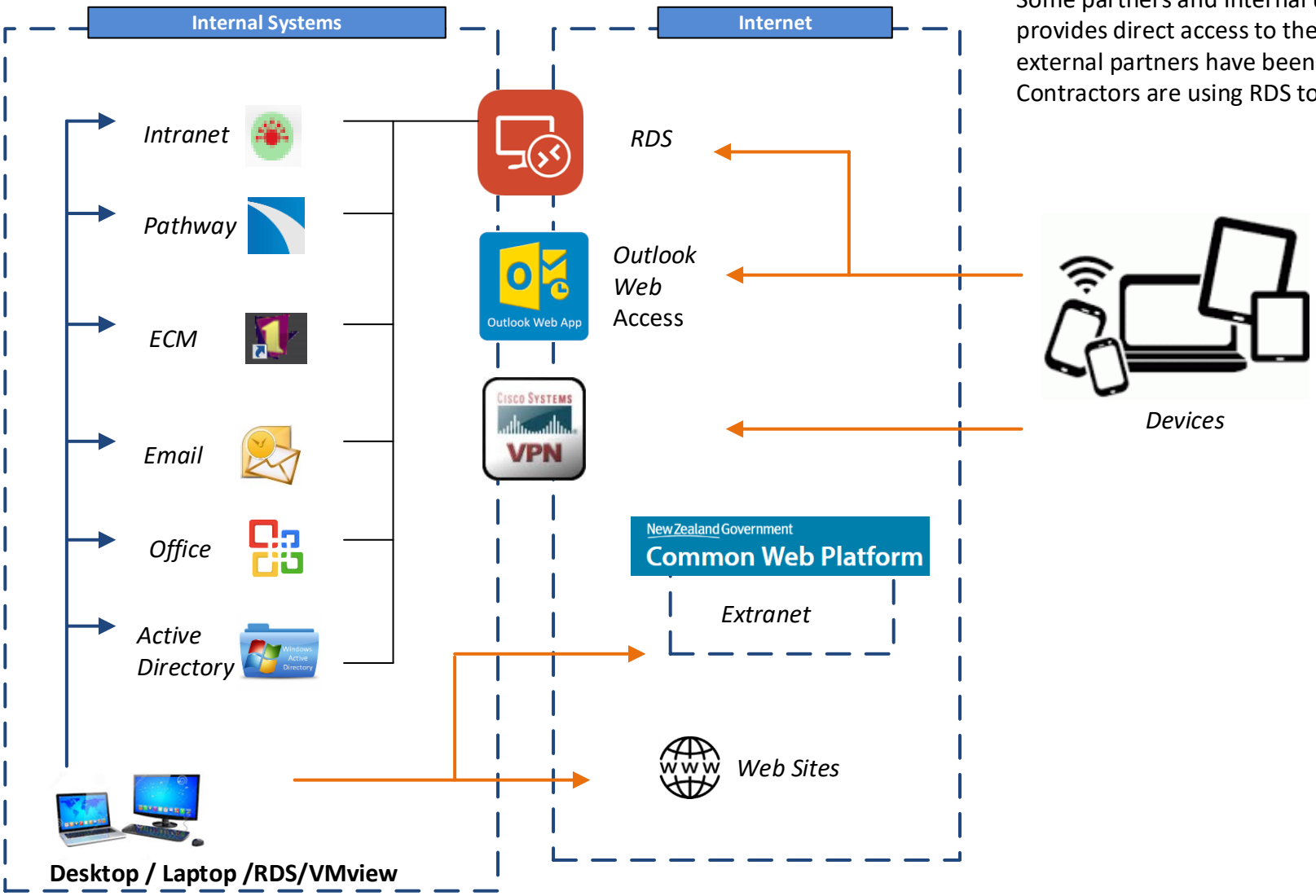
- This represents the Veeam Backups local ones to the Eternus storage and the shipped to CNS Cloud storage for 3 Days then to long Term.
- This represents the DEV and TEST VM Simplivity Backups, local ones are created every day and one each week shipped to DR site.
- This represents the PROD VM Simplivity Backups, local ones are created every day and shipped every day to DR Site.



Current User Application Connectivity

Internal Access

Applications are currently installed on Desktops/Laptops, VMView and Remote Desktop Servers, services are provided externally via the Internet as Web Sites or applications developed like the Extranet or other Cloud Service Providers. All authentication (username/passwords) are stored in Active Directory except Internet based applications that are stored with the cloud Provider (e,g. Extranet)



External Access

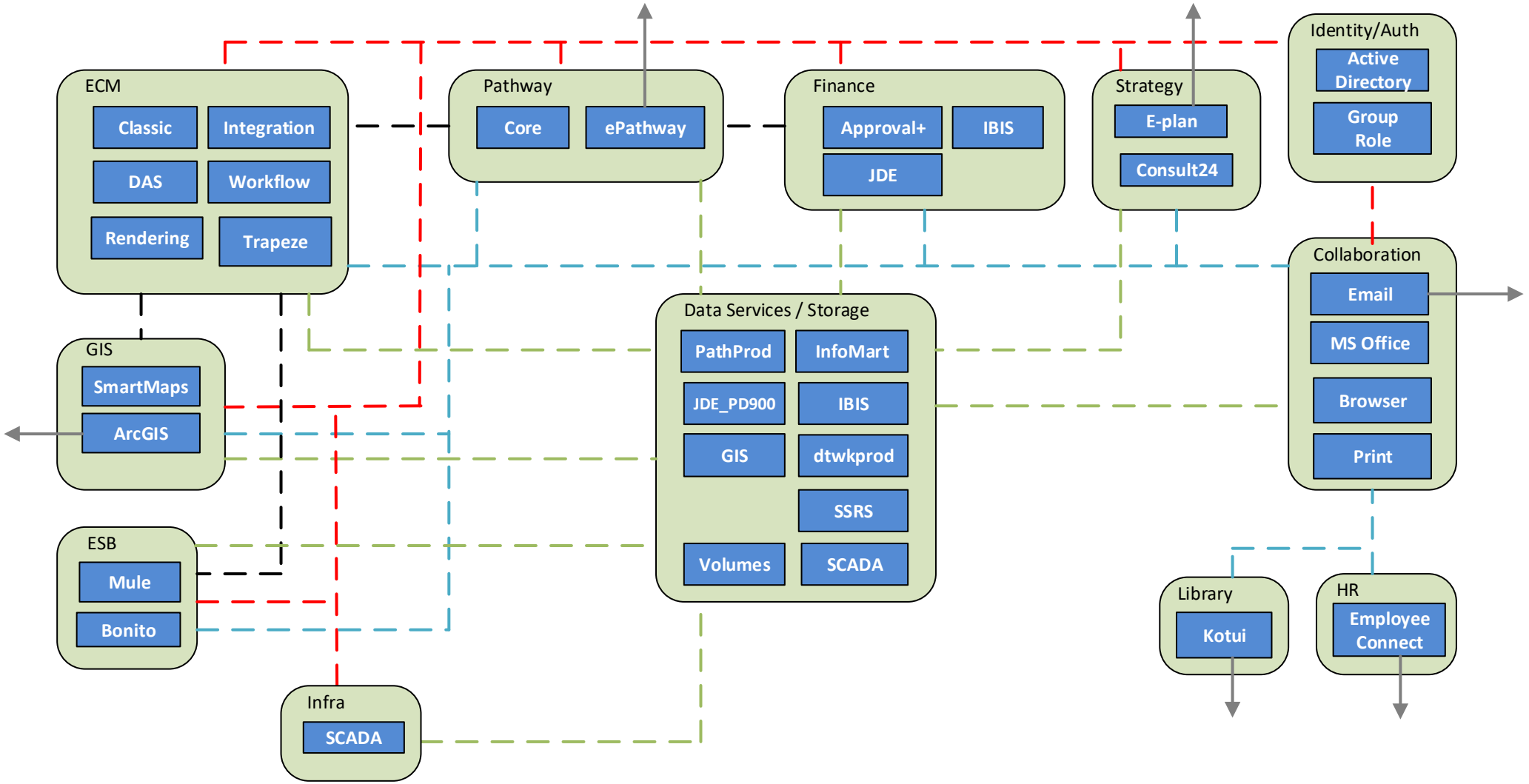
Email is accessed via Outlook Web using either a browser or phone app, All other applications are accessed via the Remote Desktop Service (RDS) Gateway to internal applications. Authentication is via the application making a request to the Internal Active Directory.

Some partners and Internal user are using the VPN this provides direct access to the Network, mostly users and external partners have been migrated to RDS e.g. All Contractors are using RDS to access Pathway for RFS

Systems on a Page

The Systems on a Page diagram shows the interactions between all of the non-infrastructure systems at TCDC. It is a visual representation of the information contained within the Integration Inventory. Several key facts can be discerned from the diagram:

- The Data Service and Storage is a central service for a large number of feeds
- The Majority of the direct integrations are with Pathway and ECM
- The Enterprise Service Bus used to integrate with existing apps to allow the build of microservices and the addition of system wide BPM Workflow Engine

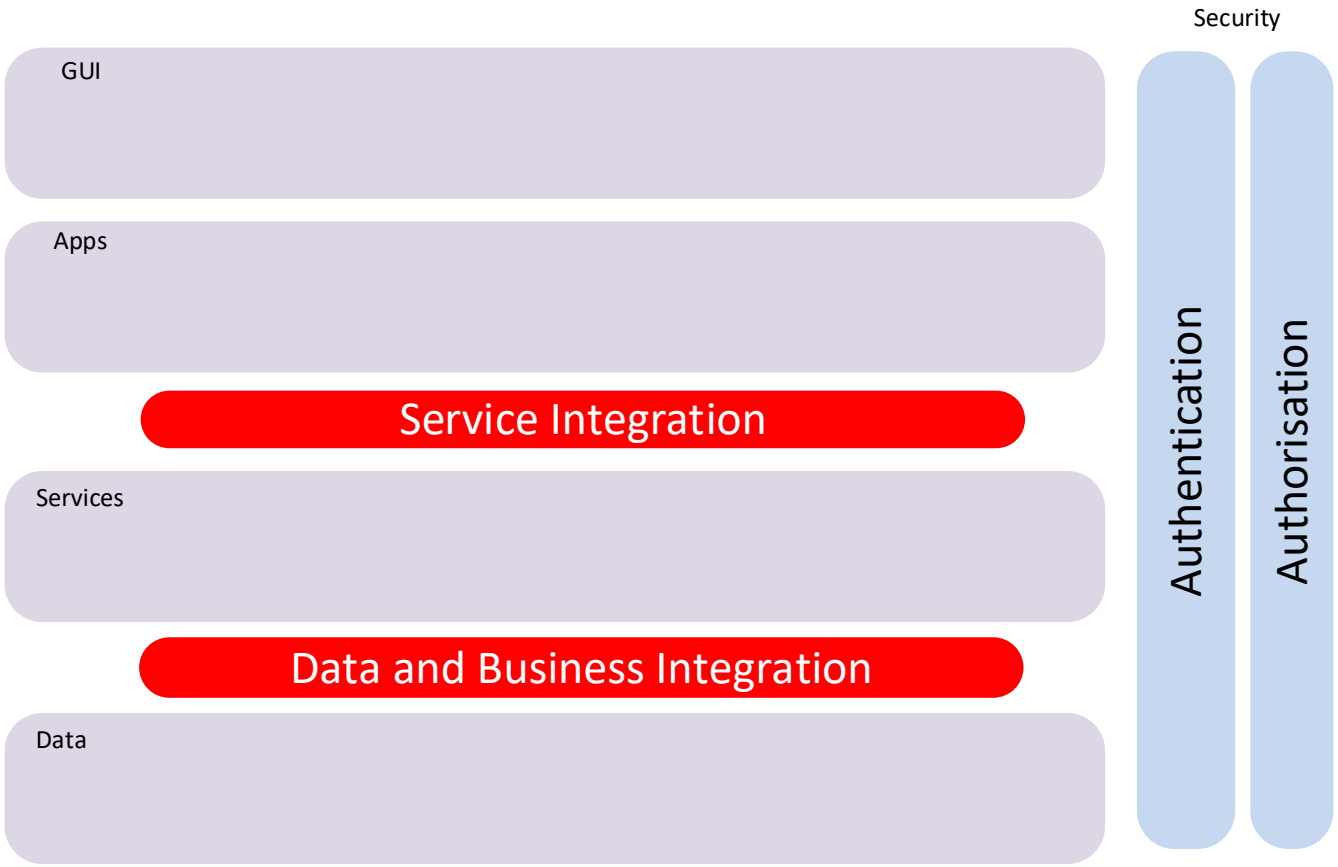


Future Logical Vision

The Logical Architecture Vision is a conceptual model evolving the enterprise architecture at TCDC in the future. As such it raises as many questions as it answers, and provides a good forum for future discussions about the architecture.

Data layer illustrates the idea that enterprise data should be logically visible and consolidated by data domain. This does not imply that, for example, all data must be physically located in the same database, or managed by the same system, but that there are a set of rules for locating, a unified view, and a standard way to access data.

Data & Business Integration Layer illustrates there should be a consistent way of interacting with enterprise data, and a coherent strategy for sharing data across systems in the case that shadowing data is still necessary. This layer is key to achieving the goals of the data layer, i.e. logical consolidation and access to data by domain



Services layer represents the separation of re-usable services from application logic. The service layer will thus consist of services with clearly defined contracts that can be used by any application.

Service Integration layer is responsible for exposing the services in the architecture in a consistent manner while enabling services to be implemented in a variety of technologies. Ideally it should also define the standard contract for a service type, therefore allowing substitution of service implementation without affecting clients of the service.

Applications layer shows groupings of applications that are built for specific purposes. By leveraging services available in the architecture, applications should generally be quicker to develop and easier to maintain.

User Interfaces layer conveys the idea that users should have a single point of access for related functions that they use. This might be implemented as one or more portals.

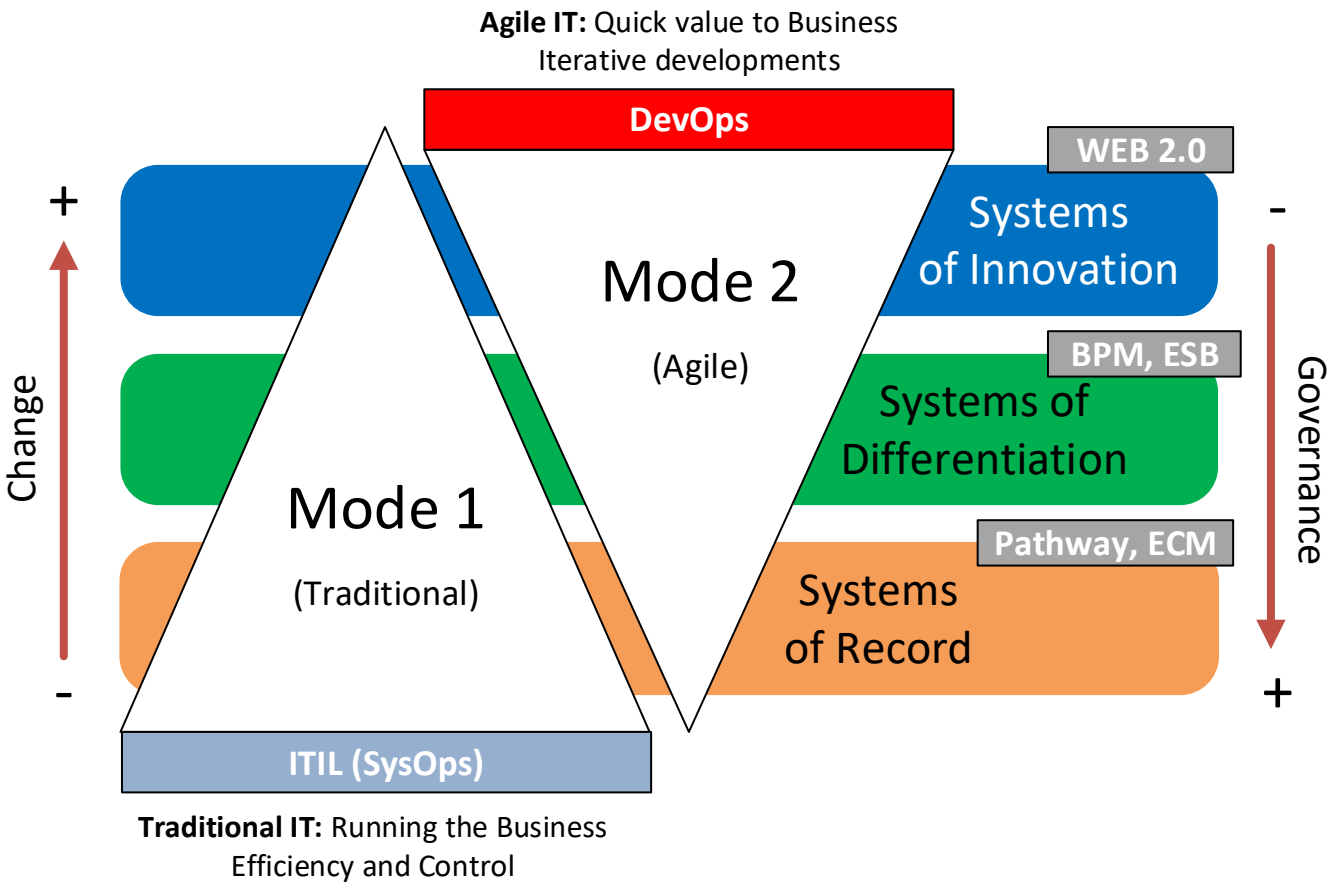
Security Services layer, while conceptually similar to other types of services has been shown separately because it has significant impacts at all levels within the architecture. It will be necessary to apply access and control security to data, to services, to applications and finally to user interfaces.

Future Working State (BiModal)

Digital innovation projects look significantly different from traditional application development projects. As such, a bimodal IT strategy helps categorize applications based on their value to the business, thus determining the right resources (or mode) for development and fast-tracking strategic business innovation projects.

Mode 1: Development projects related to core system maintenance, stability or efficiency. These require highly specialized programmers and traditional, slow moving development cycles. There is little need for business involvement.
Mode 2: Development projects that help innovate or differentiate the business. These require a high degree of business involvement, fast turnaround, and frequent update. Mode 2 requires a rapid path (or IT 'fast lane') to transform business ideas into applications.

By separating into two modes, IT can ensure that they have the right people, process, and technology to support business initiatives without impacting long-term maintenance projects. At the core of both working Modes is the Systems of Record, these provide the datasets utilised by both modes. The challenge here is to modernise the Traditional IT practices to be more Agile by remodeling the IT services within Mode 1.



Service 'remodeling' tools

Automation
The initial steps to remodeling Traditional IT are about incrementally improving current practice with automation and at the same time making it ready for agile and DevOps

IaaS
The infrastructure team to establish processes that can serve up full production-like infrastructure environments to devs, testers and business users.

Web-Enablement
When establishing new or updated apps ensuring that they are browser based and have an API mechanism to decouple business functions from legacy interfaces.

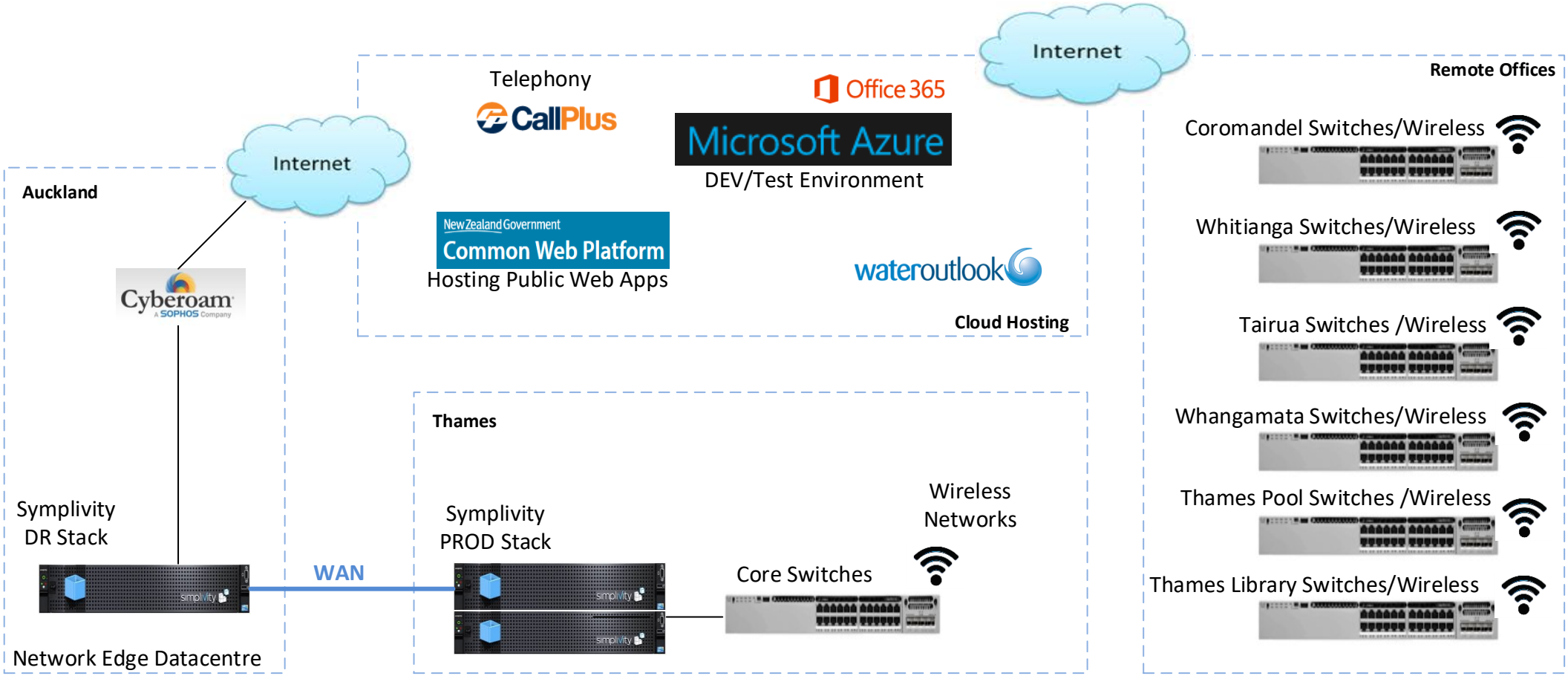
Process Realignment
Turning work from Mode 2 into mature operational products and services, while transforming existing traditional organizational processes and procedures to support faster business transformation .

Future Physical Network

This diagram represents an overview of the Future physical TCDC Network Topology.
Thames: Core Site Located in MacKay St that hosts all of the Virtual Infrastructure, Master Identity Database (AD), the Storage Systems for internally Hosted Applications e.g Pathway
Auckland: DR Site hosting copies of all Production Servers, The Security Perimeter(Cyberoam), Internet access for Thames, Public Facing Web Servers (where they need access to Internal Systems)
Remote Offices: Area Offices containing Switches, Routers and Wireless Access Points to allow access to Cores Services Via the Internet.

Symplivty Platform: A HyperConverged Platform located in Thames Hosts all the Production Servers and has backups shipped to the DR Node Every Night – these can be spun up at any time to provide access to TCDC Services in the event of a Disaster.

Cloud Hosting: A combination of Vendors, primarily Microsoft Azure to Host Office 365, Identity management and a Dev and Test Environment. Telephony as a Service (Callplus) and the Common Web Platform for Web based applications. There will be other providers in this space (e.g WaterOutlook)



Future Logical Network

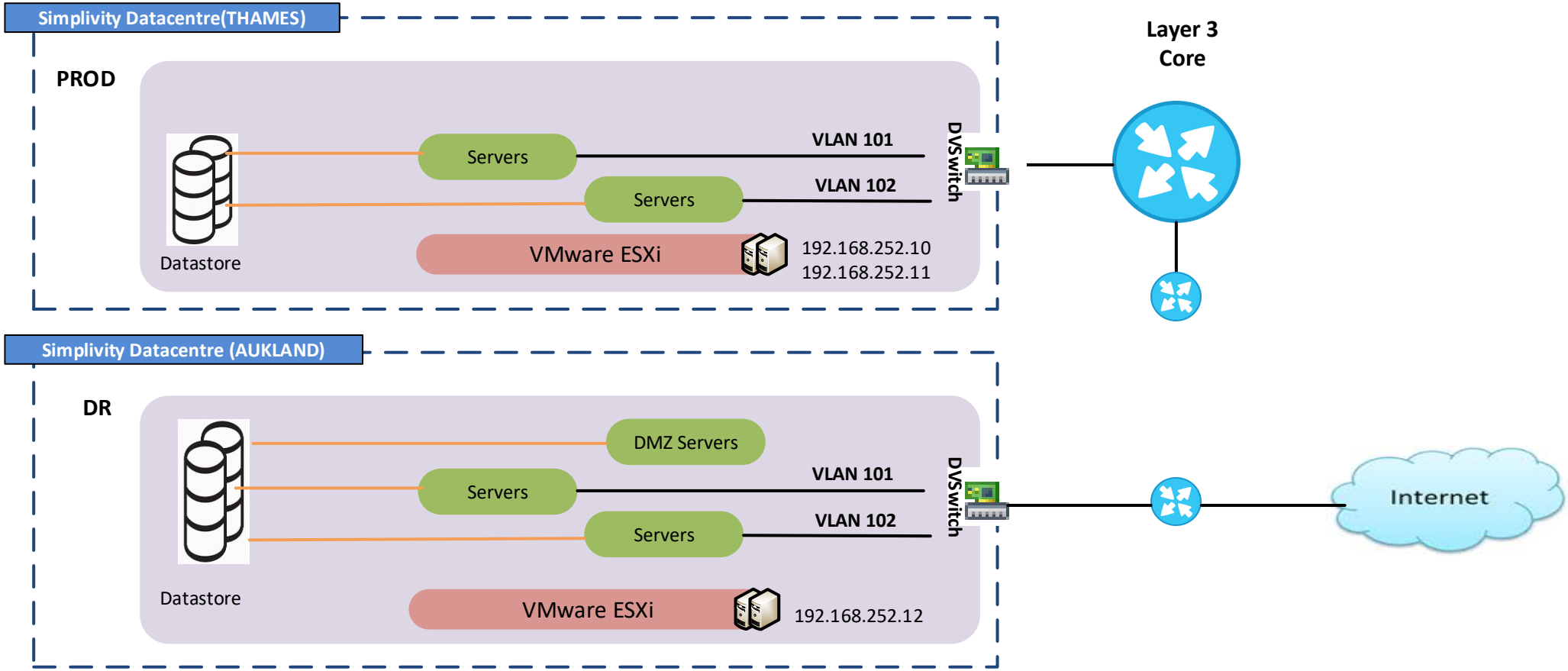
This diagram represents an overview of the future logical TCDC Network Topology.

Layer3 Core: This is the primary place where all VLAN Routing occurs for the virtual Infrastructure and for any DMZ Access/ Internet

Simplivity Datacentre: This is made up of two Logical Cluster sections

PROD Cluster: This provides hosting for all Production Servers it hosts the Primary Simplivity Datastore but has its own compute power by way of two Hosts

DR Cluster: This provides hosting for all Copies of Production Servers and the DMZ Live Servers, Internet access for Cloud Based Hosting



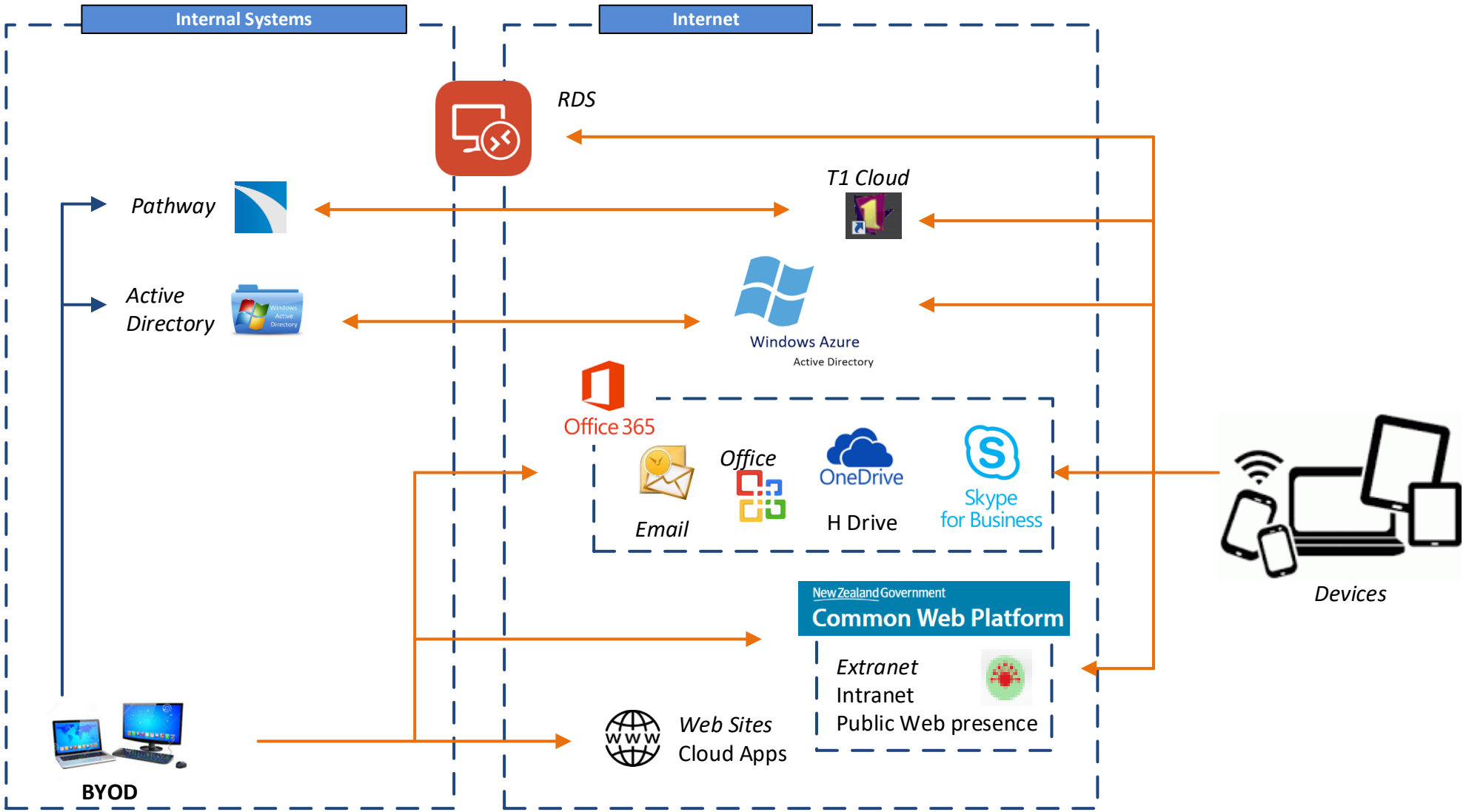
Future User Application Connectivity

Internal Access

Users are able to Bring Your Own Device (BYOD) No apps are installed on these devices applications are accessed by using either web based or RDS Internally, users still authenticated by the apps to Active Directory these logons are synchronized with Azure Active Directory in the Cloud. Intranet is based in CWP and would provide a Portal to all other Cloud Apps

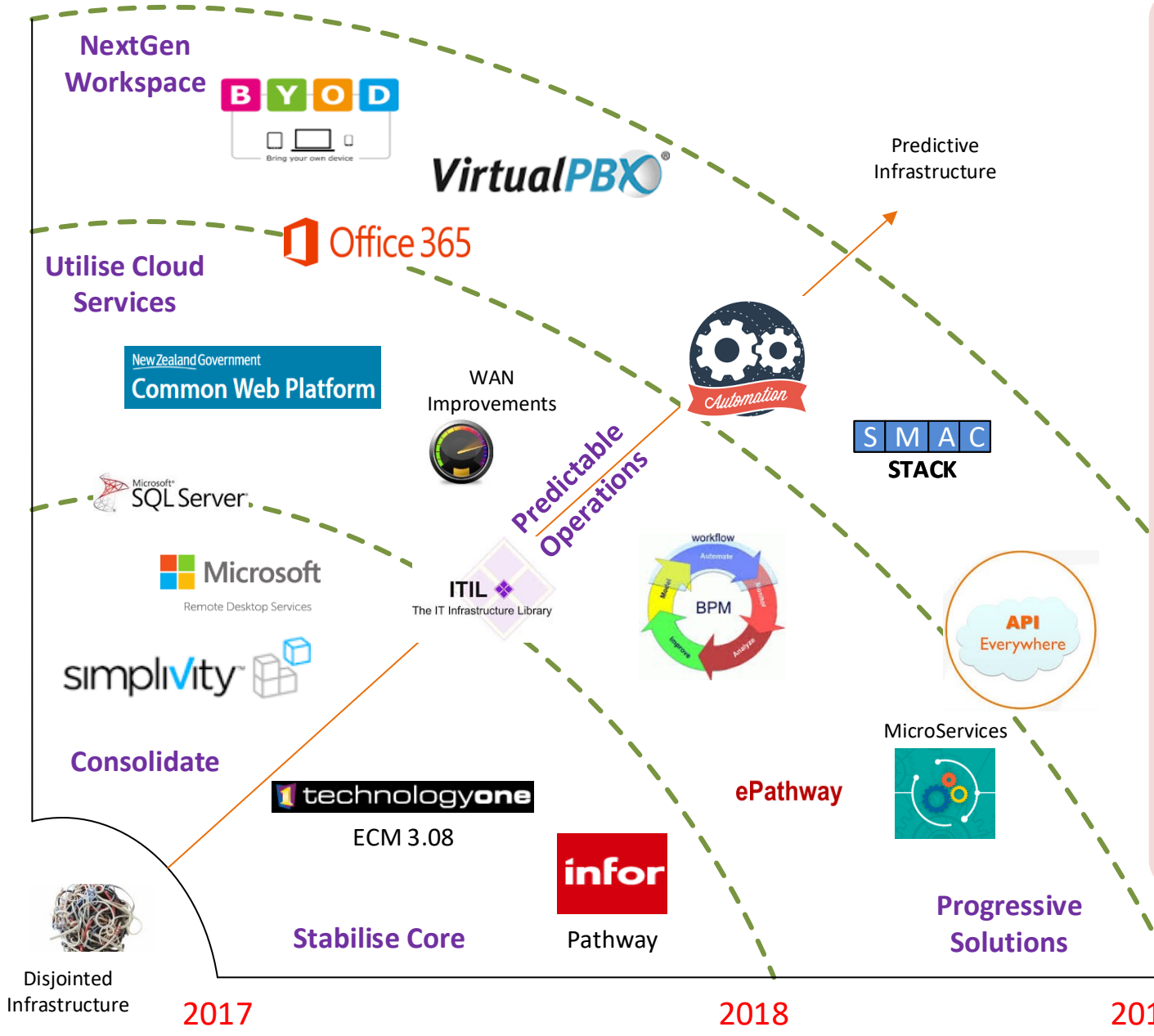
External Access

Users can work from anywhere there is an Internet Connection, are able to Bring Your Own Device (BYOD) No apps are installed on these devices applications are accessed by using either web based or RDS both are authenticated with Azure AD. Office Apps are in 365, ability to call via Skype and store files in OneDrive. Public Presence is hosted in CWP and would integrate with other applications.



Roadmap on a Page

The roadmap functions as a living document which will be updated twice per year. This initial vision serves as a baseline with estimate timelines and is based on keeping in sync with the Digital Strategy. Unknown Major Council project decisions may alter this plan.



Simplification

Consolidation – standardise service type, Create a well defined list of business services

Stabilisation/Optimisation - Reduce complexity and improve performance and reliability

Predictable Operations

Implement ITIL practices that suit TCDC operational modes and automate services and process. This will allow us to move thru the following methods: Reactive (Current Situation), Proactive (2017), Preventative and Predictive.

Business Automation via Workflow Engines will be increased

Progressive Solutions

Utilise Cloud Enable transformation – embrace Cloud/Hosted solutions where they fit into overall strategy.

Hybrid IT – Some systems will always remain in-house but can embrace integrated cloud offerings. These will include the use of and the development on API's to allow simple integration and data access

Next Gen Workspace -

Roadmap Description

There are many new Digital natives that will inevitable affect the way TCDC delivers its IT Services, some of the key areas that will impact are social and mobile platforms as these generally require the development of new services, the use of 'Code Halo ™' techniques to personalise user experience. The Internet of Things allows new data sets to be presented in unique ways to empower thinking. Cloud Service dramatically reduces the cost, effort and delay in creating new services. Meeting these demand is daunting but focusing on key areas Simplification, Progressive Solutions and Predictable Operations make the process more manageable.

Simplification

This helps TCDC become more adaptive by consolidating and stabilising the core IS Services and Applications, by standardising the offerings the IS Department provides and investing in a robust scalable platform and embracing 'Shadow IT' The benefits are:

Making IT Easy to Consume: by providing service catalogues that clearly provide business units with definitions of services that are delivered with objectives, specifications and price.

Making IT Easy to Procure: by providing a model to allow business outcomes to align with IS Standards.

Making IT Easy to Manage: building seamless services, reduce operational costs and improving user experience by blending the applications and infrastructure teams. This will require standardized tools and process and some cross training.

Shadow IT is a term often used to describe information-technology solutions in which business units contract directly with service providers (usually Cloud) rather than wait for Traditional IT.

"The substantial majority of CIOs will need to embrace shadow IT as part of the operating model, provide a policy framework and guidelines to steer it, and provide appropriate services to support it" says Gartner

Industrialization of Core IT Services

The resulting more predictable core IT services are one leg of the 'Bimodal Approach' to managing and exploiting IT.

The second leg of the approach "seeks to develop a more agile and innovative capability, culture and approach to leadership that can meet the emerging challenges of digitization" according to Gartner.

Predictable Operations

This requires TCDC IS Department to master the fundamentals of consistent and measurable SLAs, moving from reactive to proactive operations by embracing automation. Predictability improves business effectiveness and user efficiency and re-allocation of resources (time) toward higher value areas.

There are 4 classes each provides a higher level of service and lower management costs.

Reactive: IS reacts to problem after it occurs, largely relies on historical analysis.
Proactive: monitoring services continuously to detect and solve problems. Integrated application/ infrastructure view of environment. Industrialization of Core IT Services.
Preventive: auto remediation where systems make informed decisions based on pre-existing policies.
Predictive: automated problem solving , pattern recognition, predict and solve before they occur.

Roadmap Description

Progressive Solutions

This focuses on moving from the current state of using traditional IT to focusing purely on future business demands, mainly around improving foundational architecture and process technology. At a high level next generation datacenter services and next generation workspaces.

Cloud Enablement: by providing service catalogues that clearly provide business units with definitions of services that are delivered with objectives, specifications and price. The use of the SMAC Stack will become a core part of TCDC Infrastructure.

Hybrid: Hybrid IT is an approach to enterprise computing in which TCDC provides and manages some information technology (IT) resources in-house (e.g. Pathway, ECM) but uses cloud-based services for others. A hybrid approach allows a centralized approach to IT governance, while using cloud computing for well defined applications.

What is the SMAC Stack?

Social Use of Social Media as mechanism to connect to people

Mobile Support of different mobile technologies to push information. Spread of affordable 4G networks

Analytics Different ways of looking and viewing data

Cloud Collect , Access and analyse data from anywhere

[…] Microservices : Building Services with the Guts on the Outside "If you're an application architect it's unlikely that you have missed the emergence of the latest buzzword in our armoury : Microservices. And, if you missed it before you've found it now. Whether or not you are familiar with microservices, I want to introduce you to what I think is an important clarification of microservice architecture: the distinction between simpler "inner architecture" and more complex "outer architecture". … While not a panacea, I can see the potential for microservices to change the way we build, maintain and operate applications. When delivered with discipline they help applications become more evolvable, more portable, and more adaptive, particularly as organisations look to migrate application workloads to private or public cloud platforms." Via Gary Ollife, Gartner […]

Microservices: this architectural style is an approach to developing a single application as a suite of small services, each running in its own process and communicating with lightweight mechanisms, often an HTTP resource API (e.g. RID Service). These services are built around business capabilities and are independently deployable. Provide an easy way to extend the functionality of core applications to provide customised business applets.

Workspace: The workplace is becoming more device diverse as users stay connected where ever they are. With these different devices and accompanying platforms, TCDC will need an effective mobile device management strategy. By Implementing solutions that encompasses features for security management, policy implementations, multi-platform support and content monitoring, TCDC will able to achieve a successful BYOD program. This will also incorporate the use of Virtual telephony services that allow users to collaborated from anywhere.

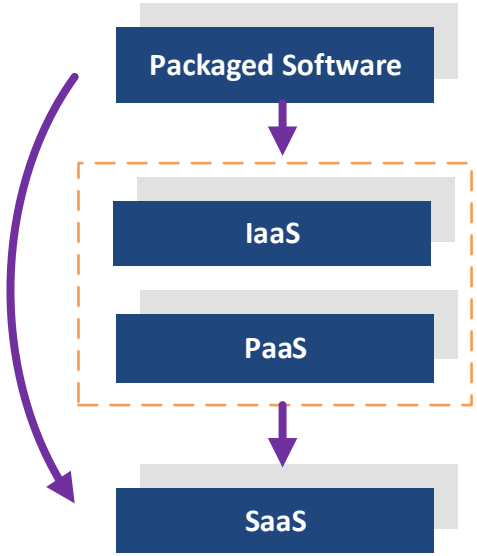
Cloud Journey Description

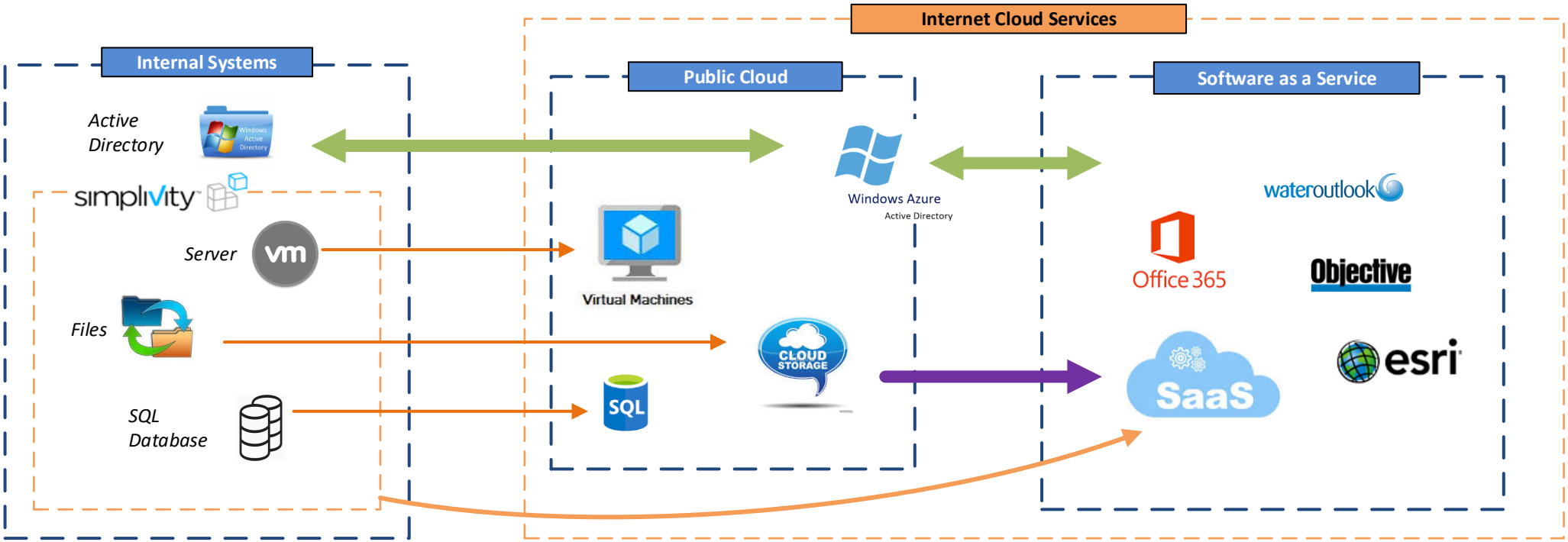
Progressive Migration to SaaS

Moving from internally hosted – packaged applications on the simplivity platform to pure Software as a service may not necessarily happen at once for all services.
Applications could be moved and hosted in the Public Cloud as Infrastructure as a service (VM's and Storage) or Platform as a Service (Database) before they are available as a Software as a Service.

Initially a presence in the cloud would be required if Central Authentication Services (Active Directory) is required to synchronize and control User Access.

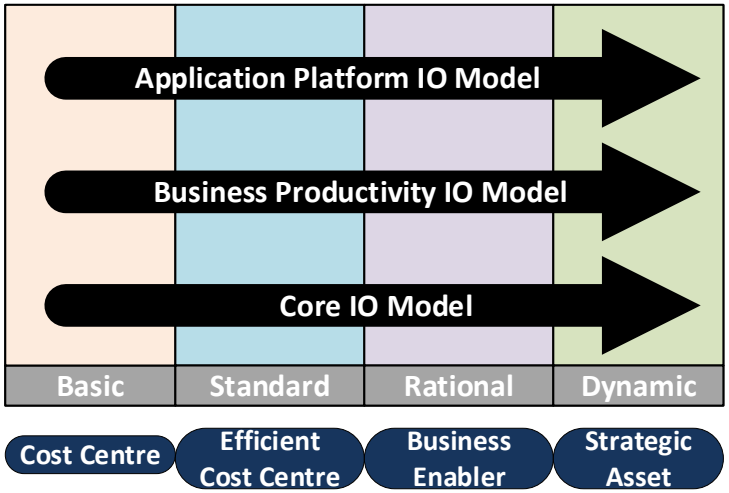
Some applications will remain internal for two reasons, one they may not be provided as a SaaS and two they may not provide Integrations that are required to other systems or system Data is deemed to valuable to entrust to others.





Moving Forward – Models for Optimization

Infrastructure optimization—centered on using TCDC assets to support and help advance the business—this will help drive cost reduction and organizational agility as well as security and efficiency gains. To help measure TCDC's level of infrastructure optimization and develop a people-ready infrastructure, there are three models to use—core infrastructure, business productivity infrastructure and application platform infrastructure— these provide four stages of infrastructure optimization



Infrastructure optimization encompasses the consolidation, centralization, streamlining and automation by policy of TCDC's diverse IT environment. The goal is to enable TCDC to manage core systems like a service, so we can proactively identify problems, improve reliability and control costs. To deliver better service quality and support business-relevant services TCDC's IS Department must shift focus from a traditional orientation on managing technology silos (platforms, networks, storage, databases) to the delivery of services in alignment with business needs. Infrastructure Optimization is a key element in this process, the four stages within each optimization stream allows us to ascertain where we are currently and what we need to do to move along to the next stage.

The enabling technologies most critical to Infrastructure Optimization include:

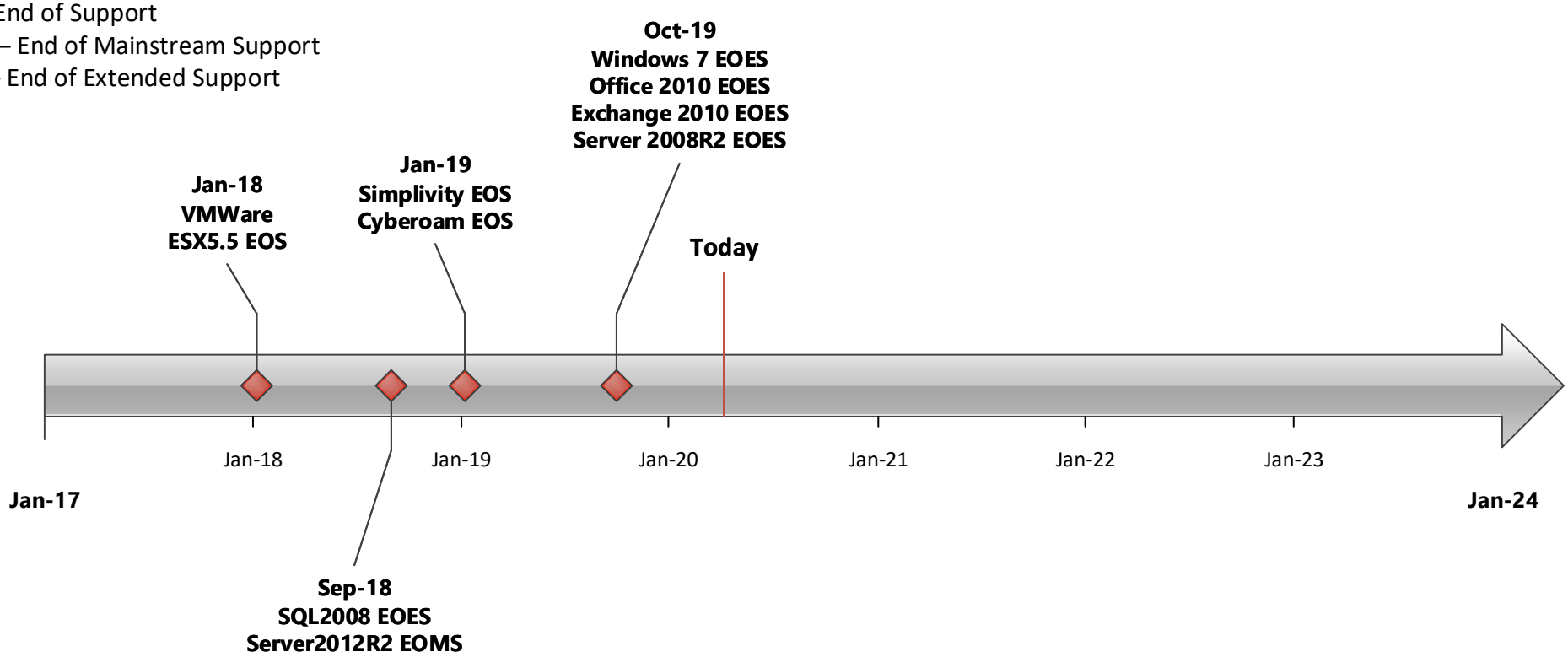
SERVICE AVAILABILITY MANAGEMENT to optimize business-driven operations and ensure consistent TCDC services by consolidating and correlating user-centric performance and event information.
NETWORK MANAGEMENT to simplify management, reduce costs and improve performance and availability across integrated, multi-vendor, multi-technology networks, including both legacy voice and Voice over IP (VoIP).
DATABASE MANAGEMENT to help reduce the cost of database ownership by supporting improved availability and more efficient administration.
APPLICATION PERFORMANCE MANAGEMENT to ensure compliance with user-defined SLA's for all business-critical processes by enabling TCDC to proactively prioritize and address infrastructure problems from the viewpoint of the business — before users "feel the pain."
WORKLOAD AUTOMATION to reduce costs and improve the delivery of business-critical services by dynamically automating workloads and schedules in real time across multiplatform environments based on events, policies and schedules.
DYNAMIC & VIRTUAL SYSTEMS MANAGEMENT to reduce cost and complexity by centralizing and automating the monitoring and management of diverse, distributed system environments.
RECOVERY MANAGEMENT to reduce cost and business risk while meeting business continuity through a common, automated foundation for data protection and recovery.

Benefits of Optimized Infrastructure

- Ensures Delivery and Quality of services
- Improves Responsiveness
- Reduces Downtime
- Reducing costs
- Reduces Complexity
- Optimizes current infrastructure investment
- Move beyond just managing IT to becoming a business enabler
- Rationalize overlapping point Solutions
- Gain better handle on current deployments
- Automation to reduce Human error and tactical effort

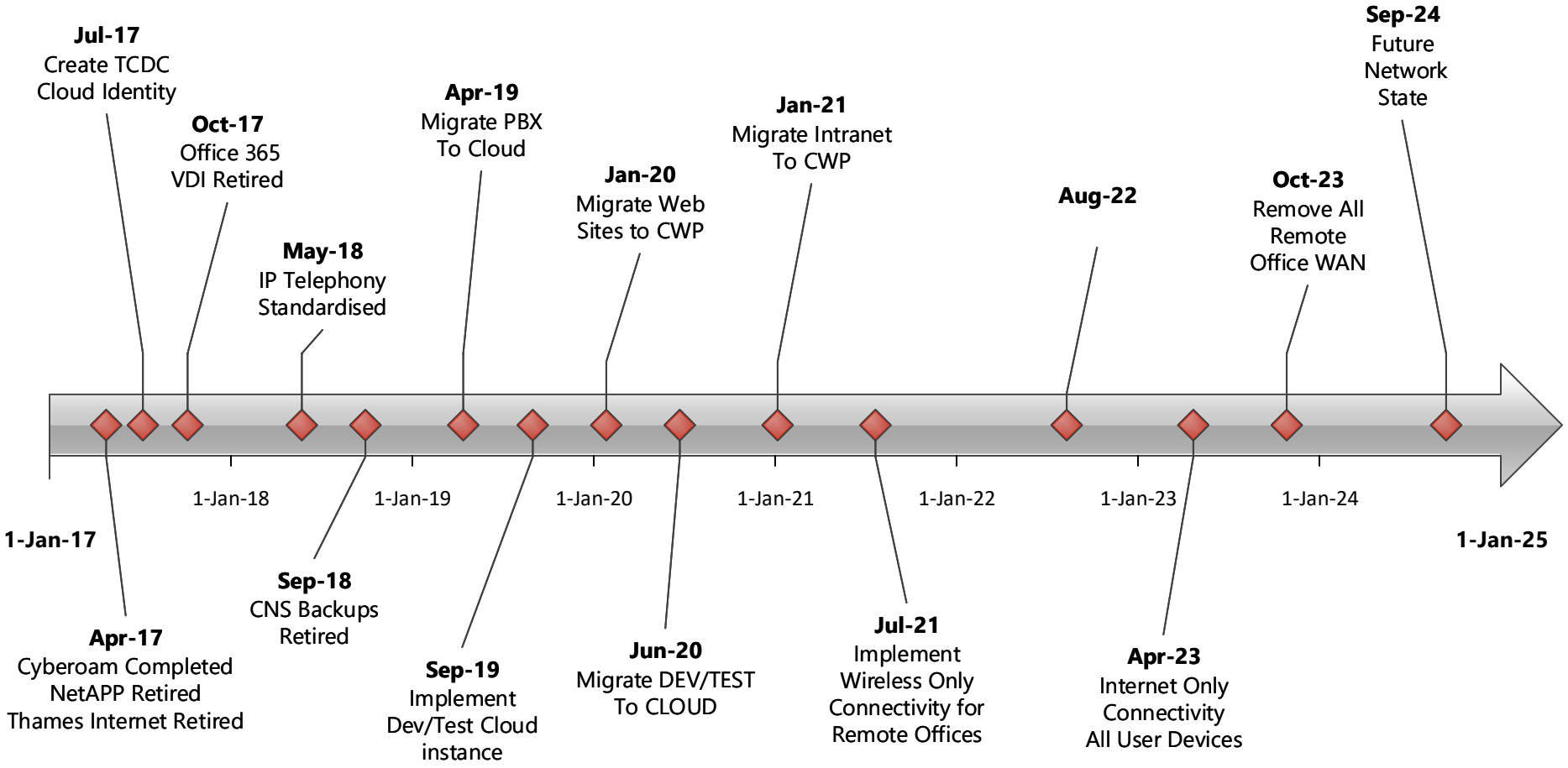
Infrastructure Software Timeline

EOS – End of Support
EOMS – End of Mainstream Support
EOES – End of Extended Support



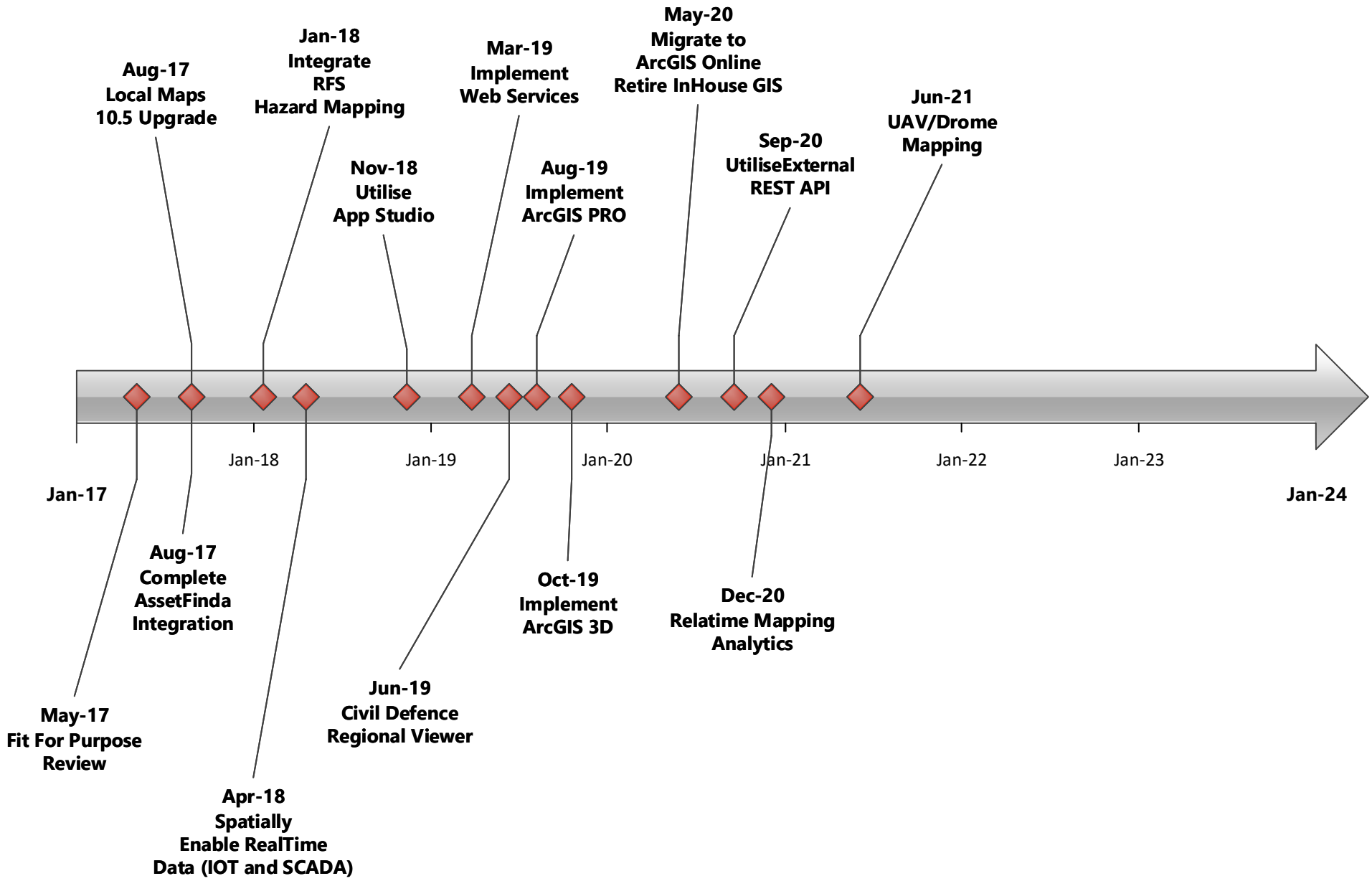
This Timeline represents the Platform Software that will need to be migrated to new versions as they no longer will be supported or provide Security patches.

Network Services Timeline (Physical and Logical)



This Timeline represents the high level steps required to reach the Future Network State made up of the Physical and Logical Network
These milestones represent the major areas of Change but will contain many small projects to achieve these results.

GIS Software Timeline



Records Management

The requirement to keep full and accurate business records does not mean every work-related conversation, interaction, or piece of correspondence needs to be kept. It relates to those records which document a business action, transaction, or decision and are a record of your business activity. These things should be defined in a well maintained Recordkeeping Framework – which is a combination of people, policies, procedures, resources, methods, technology, institutional culture, data and knowledge.

Records Framework

Recordkeeping Framework should be considered as a strategy, not as an automated system or an off-the-shelf software package.

The Framework does do not have to be dedicated recordkeeping systems; it can be business information systems, or applications, which incorporate the functionality required to maintain records.

Monitoring and Compliance

Records

Maps, Photos, Videos, Documents, Physical, e-mail, database, File Stores, scans, etc

Procedures

Registration of correspondence, workflow processes, how disposal takes place, how records are created or transmitted in the carrying out of business.

informs procedures and are used to determine the recordkeeping framework at a strategic or high level but may also address specific procedural and operational areas.

Classification

Sets a hierarchy for structuring business functions and activities and subdividing record groups according to context.

From storage space and staff time, through to hardware and software resources.

Technology

Many different systems and records formats will have to be integrated in a hybrid configuration. These records may be held within EDRMS, paper filing registries, email storage archives, shared drives, or systems that were not developed originally as recordkeeping systems.