

Understanding Parallels RAS Multi-Tenant Architecture

- Parallels Remote Application Server 17.1
- Parallels Remote Application Server 18.3
- Parallels Remote Application Server 19.1

Target audience

- IT professionals (such as system administrators) familiar with the customer's environment structure for Parallels RAS
- Existing Parallels RAS administrators
- Support engineers for tenants monitoring

Prerequisites

- Experience operating Parallels RAS farm
- Familiar with planning for a Parallels RAS environment on a scale similar to the size of the customer's environment
- Advanced understanding of the customer's network structure

Note: Parallels RAS multi-tenant architecture is available only starting from Parallels RAS v17.1. Older versions are incompatible.

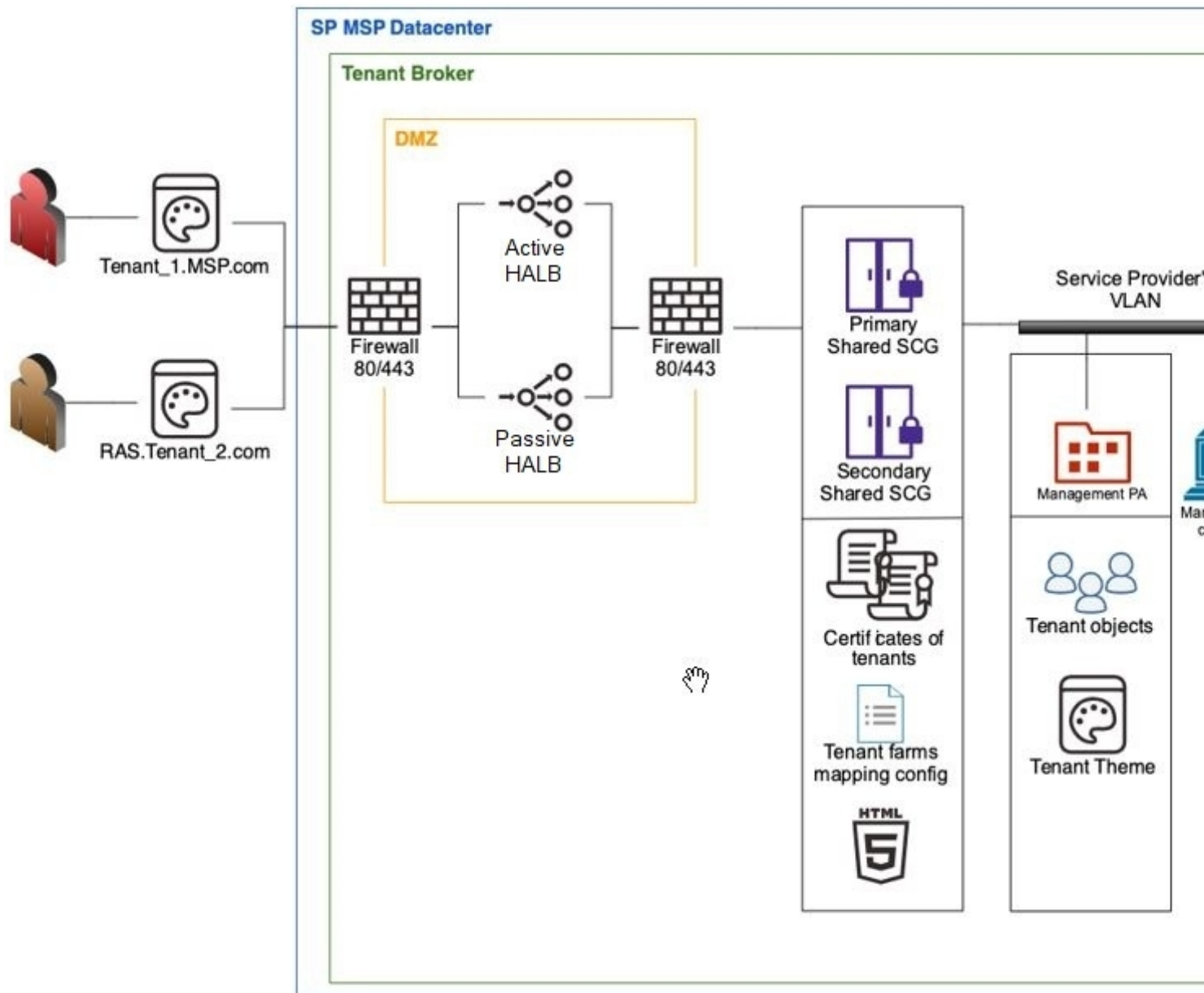
Advantages of RAS multi-tenant architecture

- Cost savings due to the reduction of Parallels RAS Secure Client Gateways and High Availability Load Balancers (HALBs)
- Faster deployment of new tenants/customers
- Simplified centralized management of multi-tenant environments
- Extended market reach through reduction of operational costs for organizations of any size by allowing cost scaling through shared infrastructure

Terminology and architecture description

- **Tenant** is technically a **site** in the **farm**.
- **Tenant Broker** is a separate **farm** that hosts **shared Parallels RAS Secure Client Gateways**.
- **Shared Parallels RAS Secure Client Gateways** serve connections to remote desktop (RD) Session Hosts, VDI Guests or Remote PCs of Tenant Farm.
- **Tenant Object** represents the **tenant** after joining to **tenant broker** Farm in the Parallels RAS Console of **tenant broker**.
- **Tenant theme** allows branding of the HTML5 portal and Parallels Client for individual **tenant**.
- **Management Publishing Agent (PA)** stands for the main **PA** on **tenant broker farm**.

Typical Parallels RAS multi-tenant architecture diagram:



- The user's connection should be initiated to a **public domain address** that can be assigned by the **Managed Service Provider** and registered as a subdomain (e.g. **Tenant_1.MSP.com**). Alternatively, use a private domain address (e.g. **RAS.Tenant_2.com**) and have it routed to Parallels RAS Secure Client Gateways in the **Tenant Broker** farm.
- In this case, the connection from external users to the public domain address is going through a firewall to DMZ and then to the **Active HALB** (Passive is on standby in case master fails) and then through another firewall to one of the **Shared RAS Secure Client Gateways** of the **Tenant Broker** Farm. (HALB takes care of load balancing between **Shared SCG**). At this point, the listing of published resources should happen.
- Through **Service Provider's VLAN**, the connection goes to a specific tenant farm for establishing a remote session (using ports **TCP/UDP 3389** by default) according to the configuration of a particular published resource (application, desktop, etc.)
- Connections to Port TCP 20002 should be possible both ways, as Shared Gateways will use this port to communicate with **Publishing Agents** on **Tenants** and **Management Publishing Agents** on **Tenant Broker Farm**.

Note: Port **TCP 20003** is required for only outgoing connections from **Tenant Publishing Agents** to **Management Publishing Agents** on **Tenant Broker** in order to synchronize settings. Also, note the requirement to have port **TCP 20001** open from the RAS Console running on the Tenant to the Tenant Broker Publishing agent.

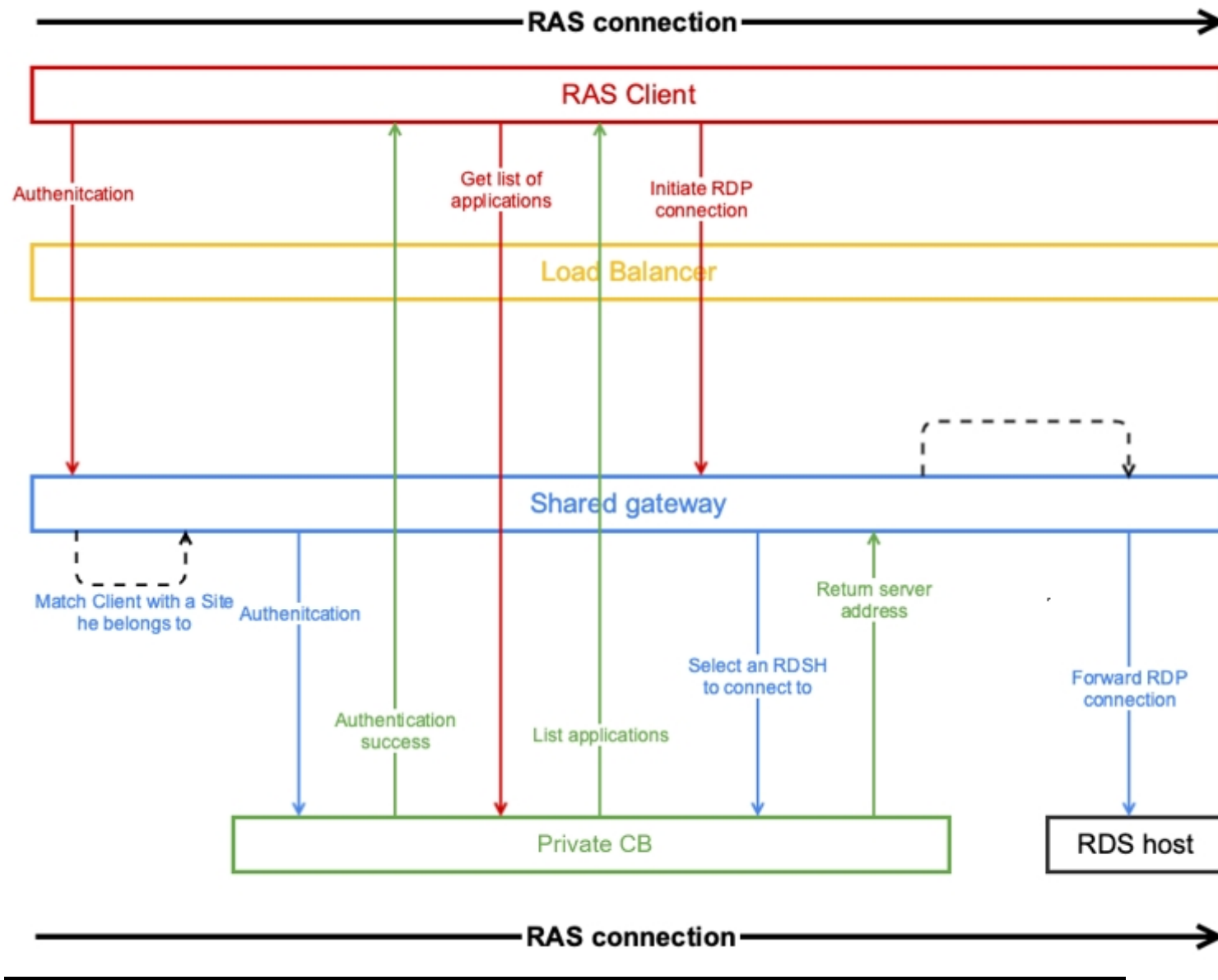
Feature description

- **Broker** and **tenants** may have more than one **publishing agent**. Their redundancy database is independent.
- **Tenants** are originally designed to not communicate with each other at all. The exclusion here is a multi-site infrastructure, as it stores settings for all sites in a single database which enables a small probability of potential influence.
- Tenant Broker is **ONLY** compatible with Parallels Clients 17.1 and Tenant Farms 17.1 and onwards.
- Tenants may have their own gateways. There are no changes in local gateway functionality for private tenant gateways.
- Broker infrastructure is responsible for all internet-facing connections. Certificates must be configured on the broker side.

Known limitations

- To be able to work with **Tenant Broker**, a **Tenant Farm** must join **Broker** first.
- Tenants can have their own domains. A trusted relationship is not necessary between tenant and Tenant Broker. A non-Domain Farm even can be used as a Broker or Tenant.
- User authentication, multifactor authentication (MFA), policies, filtering, etc. are performed on a tenant side.
- **Tenants** must have a unique **Public domain address**. Routing of traffic to a load balancer or gateway is out of scope for Parallels RAS.
- **Client Manager** functionality for now is available only via dedicated gateway on **Tenant Farm**, not shared gateway on **Tenant Broker**.
- Managing licenses and user sessions is currently only possible from **each Tenant Farm individually**. RAS Console with multiple connections can be used to connect to each Farm for managing.
- [Upgrading Multi-Tenant environment. \(click to open\)](#)

Parallels RAS Connection Diagram



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