



# Carolina CloudApps

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Middleware Services



UNC  
INFORMATION  
TECHNOLOGY SERVICES

[its.unc.edu](http://its.unc.edu)

# \*-as-a-Service Introduction

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- IaaS – Infrastructure as a Service
- PaaS – Platform as a Service
- SaaS – Software as a Service



# Infrastructure as a Service (IaaS)

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- Abstraction of underlying hardware resources
- Examples:
  - Amazon EC2
  - ITS Virtual Machines



# Platform as a Service (PaaS)

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- Abstraction of the underlying hardware, software, and application resources
- Examples:
  - Microsoft Azure
  - Carolina CloudApps



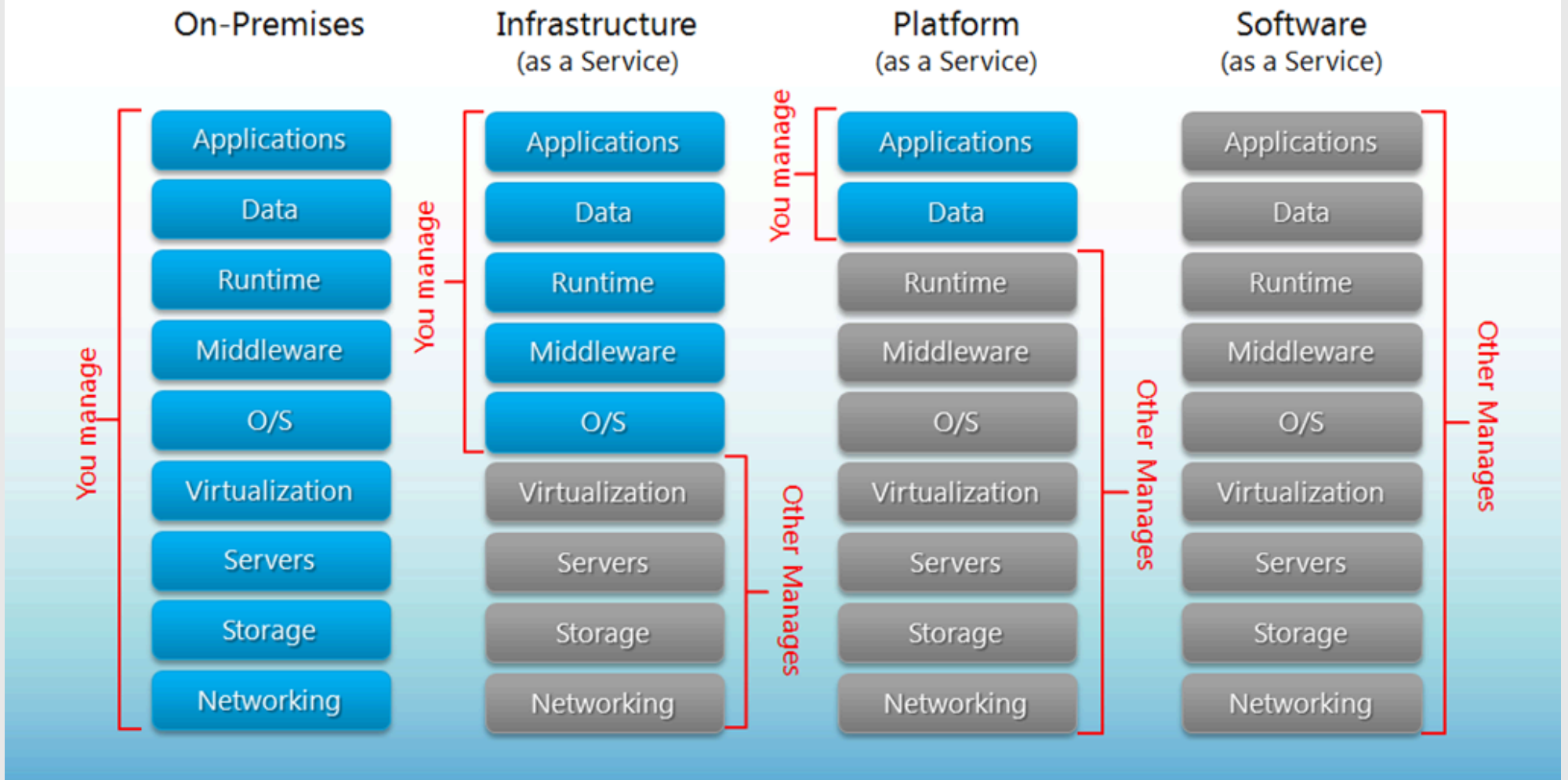
# Software as a Service (SaaS)

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- Complete abstraction
- Example:
  - Qualys
  - Google Apps
  - [web.unc.edu](http://web.unc.edu)



# Separation of Responsibilities



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# What is Carolina CloudApps

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- Platform as a Service (PaaS) using Red Hat's OpenShift Enterprise
- Managed platform for web application development (LAMP stack)
- Eventual replacement for legacy apps on [www.unc.edu](http://www.unc.edu)
- Freely available for all students, faculty and staff
- Out of the box support for Java, PHP, Python, Perl, Ruby, node.js
- Out of the box support for MySQL, MongoDB and Postgres
- Large community support for 3rd party applications via quickstarts (<https://hub.openshift.com/>)



# Features

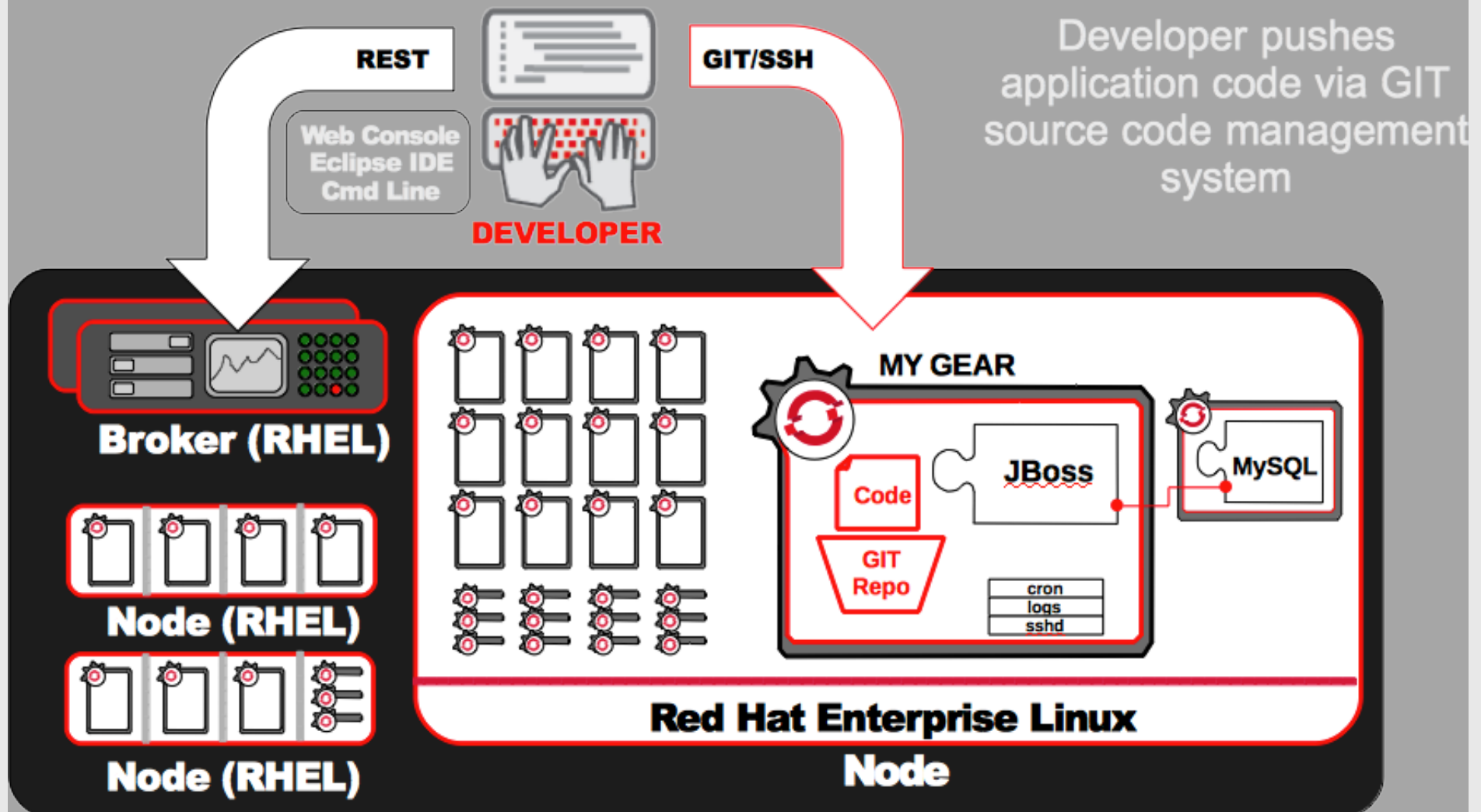
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- `http(s)://<your_app_name>-<your_onyen>.apps.unc.edu`
- Free SSL certificate support for `*.apps.unc.edu`
- SSH access (database command-line tools, troubleshooting)
- Log files access (via SSH and through command-line tools)
- Custom domains (with custom SSL certificates)
- Most importantly, freedom to do what YOU want to do





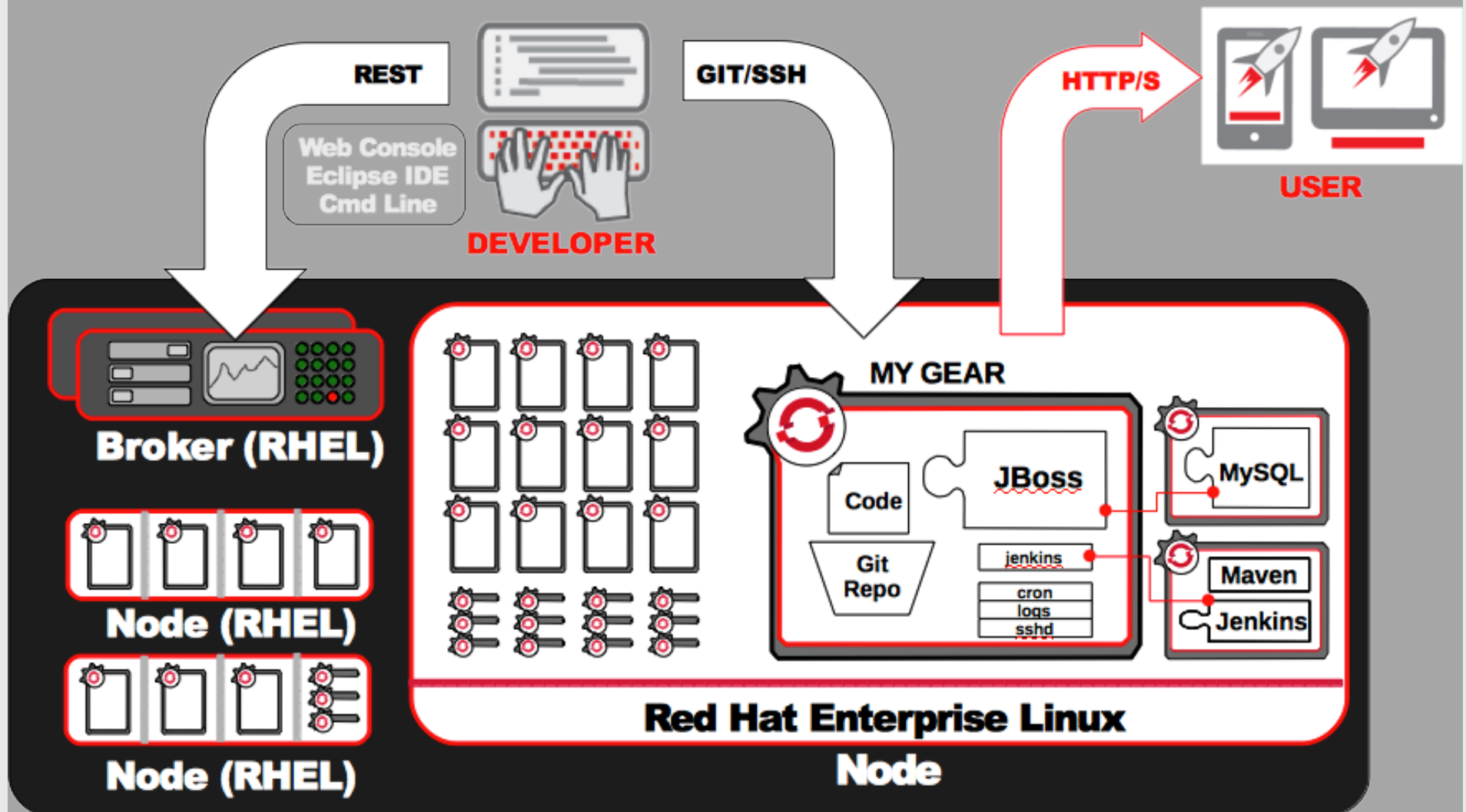
# Code & Push



Source: Red Hat



# HTTP(s) Served Through Gear



Source: Red Hat



# Potential Migration Paths for www.unc.edu Applications

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- AFS decommission
- Static content --> web.unc.edu
- Programmatic content (Perl, Python, etc) --> cloudapps.unc.edu



# Department/Project Containers

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- Team/collaborative development
- Not tied to individual Onyen
- ACLs per project



# Next Step for CloudApps

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- Sensitive Information
  - Working with ITS Security on this currently
- OpenShift version 3
  - Full Docker image
  - Kubernetes orchestration
  - Ability to mount persistent storage
  - Unique IP addresses



# Live Demo



# Questions

@UNCCloudApps

cloudapps@unc.edu

<http://cloudapps.unc.edu>

