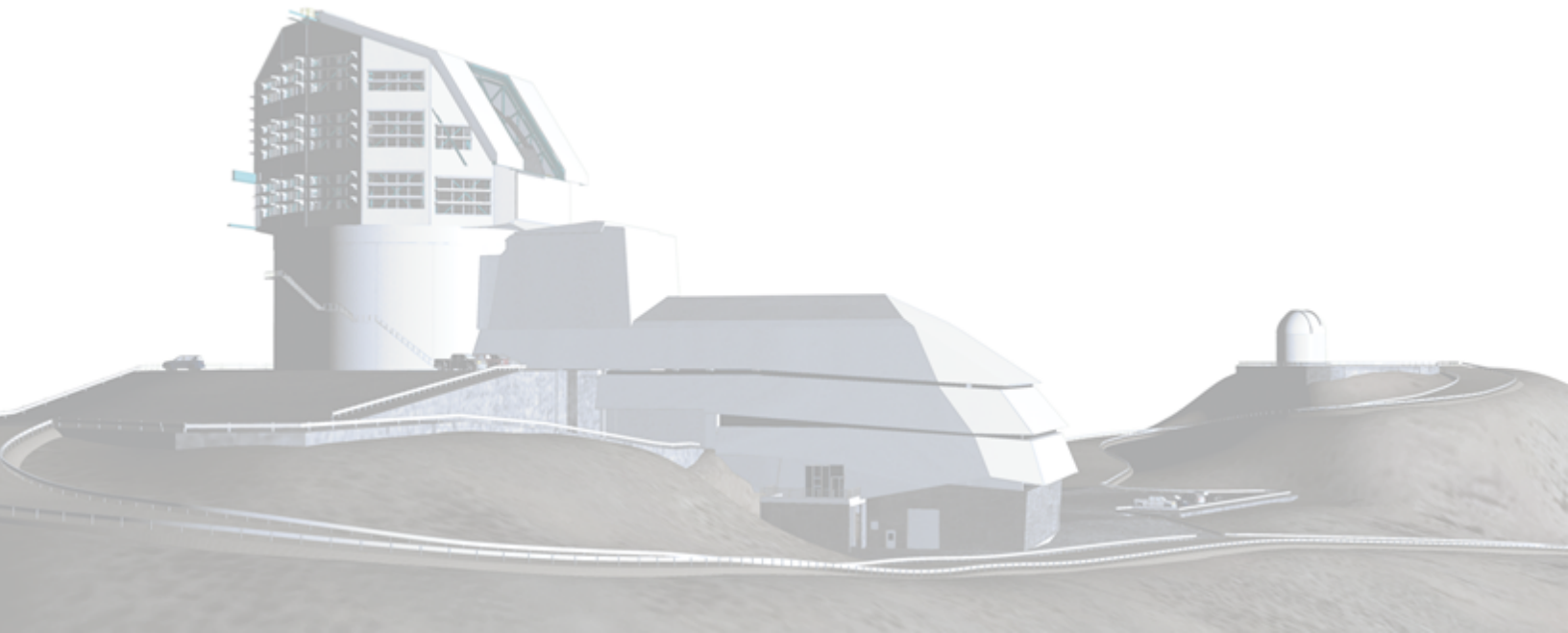

Vera C. Rubin Observatory
Rubin Observatory Project Office

Computing Infrastructure

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ITTN-014

Latest Revision: 2023-07-18

Abstract

The Vera Rubin Observatory Computer Infrastructure is formed by four sites: La Serena, Cerro Pachon, Tucson and Cloud, each composed of several clusters and nodes that support the operations. This document details each node and cluster's function and a link to review the hardware details of the clusters. Please keep in mind that a valid Rubin account is necessary to review the details of the clusters.

Change Record

Version	Date	Description	Owner name
1	2020-04-30	LSST RST Version	Ivan Gonzalez
2	2021-05-11	lsstdoc LaTeX Version	Ivan Gonzalez
3	2021-06-04	First Revision Concluded	Ivan Gonzalez
4	2021-09-23	Disk Storage added	Ivan Gonzalez
5	2021-10-18	Corrections to Disk Storage Information	Ivan Gonzalez
6	2021-11-22	Yagan Cluster Added	Ivan Gonzalez
7	2022-02-25	General Update and add Luan Cluster	Heinrich Reinking
8	2022-05-5	Add Lukay and Gaw Cluster	Heinrich Reinking
9	2022-09-8	Add Chonchon Cluster	Heinrich Reinking
10	2023-07-15	Massive Content Revamp	Cristian Silva

Document source location: `https://github.com/lsst-it/ittn-014`

Contents

Computing Infrastructure

1 Chile

1.1 La Serena

1.1.1 Manke

- **Name:** Base Test Stand (BTS)
- **Platform:** Kubernetes
- **Multicast:** Yes
- **Apps:** Nublado, Telescope Control System
- **System Details:** Rancher LS

1.1.2 KonKong

- **Name:** Base Test Stand S3 (BTS)
- **Platform:** Kubernetes
- **Multicast:** Yes
- **Apps:** Rook
- **System Details:** Rancher LS

1.1.3 Core LS

- **Name:** IT Services
- **Platform:** Libvirt
- **Multicast:** No
- **Apps:** Foreman, DHCP and DNS
- **Nodes:** 3
- **CPU:** 96

- **RAM Memory:** 231GB

Node	CPU	Memory	Network	System Storage
core01.ls.lsst.org	32	77GB	2x1GB	500GB
core02.ls.lsst.org	32	77GB	2x1GB	932GB
core03.ls.lsst.org	32	77GB	2x1GB	932GB

1.1.4 Luan

- **Name:** IT Monitoring
- **Platform:** Kubernetes
- **Multicast:** No
- **Apps:** Grafana, Telegraf
- **System Details:** Rancher LS

1.1.5 Gaw

- **Name:** IT Base S3
- **Platform:** Kubernetes, NFS/CephFS
- **Multicast:** No
- **Apps:** Rook
- **System Details:** Rancher LS

1.1.6 Ruka

- **Name:** IT Development Kubernetes Cluster
- **Platform:** Kubernetes
- **Multicast:** No
- **Apps:** Several Dev. Instances
- **System Details:** Rancher DEV

1.1.7 Kueyen

- **Name:** IT Development Kubernetes Cluster
- **Platform:** Kubernetes
- **Multicast:** No
- **Apps:** Several Dev. Instances
- **System Details:** Rancher DEV

1.1.8 NamKueyen

- **Name:** IT Development Kubernetes Cluster
- **Platform:** Kubernetes
- **Multicast:** No
- **Apps:** Several Dev. Instances
- **System Details:** Rancher DEV

1.1.9 Chango

- **Name:** IT Storage Cluster
- **Platform:** Kubernetes
- **Multicast:** No
- **Apps:** Rook
- **System Details:** Rancher LS

1.2 Cerro Pachon

1.2.1 Yagan

- **Name:** Rubin Production Environment
- **Platform:** Kubernetes
- **Multicast:** Yes
- **Apps:** Nublado, Telescope Control System
- **System Details:** Rancher CP

1.2.2 Yepun

- **Name:** IT Production Kubernetes Cluster
- **Platform:** Kubernetes
- **Multicast:** Yes
- **Apps:** IT Monitoring
- **System Details:** Rancher CP

1.2.3 Lukay

- **Name:** IT Summit S3
- **Platform:** Kubernetes
- **Multicast:** No
- **Apps:** Rook
- **System Details:** Rancher CP

1.2.4 Chonchon

- **Name:** Telescope Summit S3
- **Platform:** Kubernetes
- **Multicast:** No

- **Apps:** Rook
- **System Details:** Rancher CP

1.2.5 Amor

- **Name:** Love Nodes
- **Multicast:** Yes
- **Apps:** Docker

Node	CPU	Memory	Network	Disk Storage
love01.cp.lsst.org	16	62GB	2x10GB	893GB
love02.cp.lsst.org	16	62GB	2x10GB	893GB

1.2.6 Azar

- **Name:** Azar Nodes
- **Multicast:** Yes
- **Apps:** Docker

Node	CPU	Memory	Network	Disk Storage
azar1.cp.lsst.org	56	376GB	2x10GB	11TB
azar2.cp.lsst.org	56	376GB	2x10GB	11TB
azar3.cp.lsst.org	56	256GB	2x10GB*	10TB

*: MTU 9000

1.2.7 Core CP

- **Name:** Summit Core Cluster
- **Platform:** Libvirt
- **Multicast:** No
- **Apps:** Foreman, DHCP, DNS

- **Nodes:** 3
- **CPU:** 96
- **RAM Memory:** 231GB

Node	CPU	Memory	Network	Disk Storage
core01.cp.lsst.org	32	77GB	2x10GB	500GB
core02.cp.lsst.org	32	77GB	2x10GB	500GB
core03.cp.lsst.org	32	77GB	2x10GB	500GB

2 United States

Tucson site is undergoing a rebuilding process, therefore information may not be up to date.

2.1 Tucson Lab

2.1.1 Pillan

- **Name:** Tucson Test Stand (TTS)
- **Platform:** Kubernetes
- **Multicast:** Yes
- **Apps:** Nublado, Telescope Control System
- **System Details:** Rancher TU

2.1.2 Core TU

- **Name:** Tucson Core Cluster
- **Platform:** Libvirt
- **Multicast:** No
- **Apps:** Foreman, DHCP, DNS
- **Nodes:** 3
- **CPU:** 96
- **RAM Memory:** 231GB
- **Usable Storage:** X.XTB

Node	CPU	Memory	Network	System Storage	VM Storage
core1.tu.lsst.org	32	77GB	2x10GB	931GB	10.9TB + 477GB
core2.tu.lsst.org	32	77GB	2x10GB	931GB	500GB
core3.tu.lsst.org	32	77GB	2x10GB	931GB	500GB

3 Cloud

3.1 Google Cloud Platform

IT uses Google Cloud services to deploy development pods

- **Name:** Cloud Core Cluster
- **Platform:** GKE
- **Multicast:** No
- **Apps:** Graylog
- **Nodes:** 3
- **CPU:** 6
- **RAM Memory:** 17.7GB
- **Usable Kubernetes Storage:** 200TB

Node	CPU	Memory	Network	Storage
node1	2	5.9GB	1x10GB	100GB
node2	2	5.9GB	1x10GB	100GB
node3	2	5.9GB	1x10GB	100GB

A Acronyms

Acronym	Description
CP	Cerro Pachon
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
GCP	Google Cloud Platform
GKE	Google Kubernetes Engine
IT	Information Technology
ITTN	IT Technical Note
LS	La Serena
RKE	Rancher Kubernetes Engine
RST	reStructuredTex
TU	Tucson
WUI	Web User Interface