Autores:

Oscar Rubio García

PracticaL A

PGPI

# Practical A

## Network Organization Objectives Checklist

|  |  |
| --- | --- |
|  | Task |
| X | I have informed myself of the client’s industry and competence. |
| X | I understand the client’s corporate structure. |
| X | I have done a list of the client’s business objectives, starting with the general business objective explaining the projects main purpose. |
| X | The client has identified the most critical tasks. |
| X | I understand the client’s success criteria and the consequences of failure. |
| X | I understand the projects scope. |
| X | I’ve identified the network apps used by the client. |
| X | The client has explained its politics regarding brands, protocols and accepted platforms. |
| X | The client has expressed its politics regarding open solutions versus propriety solutions. |
| X | The client has expressed its politics regarding the network’s distribution authority design and implementation. |
| X | I know the projects Budget. |
| X | I have learned the projects schedule, including the delivery date and the main milestones to achieve. I believe its achievable. |
| X | I understand my clients and other personnel related to the project’s technical knowledge. |
|  | I have discussed about the future personnel learning courses. |
| X | I’m conscious about the office politics that could affect the network plan. |
|  |  |

## Organization Objectives

|  |  |  |
| --- | --- | --- |
| Business objective | Info | Comments |
| Networking of the current hospital branch floors and its telepathology service must be done with the minimum obstruction of the current service provided. |  | This is a critical goal. |
| System should deploy to floors 4, 6 and 7. | At bare minimum floor 4 should have a guaranteed deployment. | This is a critical goal. |
| System should connect both telepathology labs. |  | This is a critical goal. |
| System should be deployed by June. |  | This is a critical goal. |
|  |  |  |

## Network Technical Objectives Checklist

|  |  |
| --- | --- |
|  | Task |
| X | I have documented the clients plans to expand during the next 2 years, the number of locations, users and servers. |
| X | The client has told me about the migration plans on the department’s servers to a centralized data center. |
| X | The client has told me about its plans to integrate old data stored in old mainframes in the business network. |
| X | The client has told me about its plans to implement an extranet in order to communicate with other companies. |
|  | I have documented the objectives network uptime in a timescale and its MTBF and MTTR. |
| X | I have documented the networks maximum use objectives. |
| X | I have documented the objectives involving the ratio of data transference of the network. |
| X | I have documented the objectives related to packets send per second in the network’s interconnection devices. |
| X | I have documented the objectives relating to acceptable error ratio and precision. |
|  | I have discussed with the client about the importance of utilizing large wefts in order to maximize efficiency. |
|  | I have discussed with the client the decision and compromises related to the use of large wefts and delay serialization. |
| X | I have identified the apps that require a stricter response time than standard apps or even lower than 100ms. |
| X | I have discussed with the client security risks and requirements. |
| X | I have obtained the requirements involved in the network’s management, including the performance goals, failure, security configuration and accounting management. |
|  | I have updated the apps network diagram in order to include the technical objectives of the apps. |
| X | With the client, I have developed a list of network objectives, including both technical objectives and business objectives. The list starts with a general objective and includes the rest of goals ordered by priority. All critical goals have been highlighted. |
|  |  |

## Technical Objectives

|  |  |  |
| --- | --- | --- |
| Technical objective | Info | Comments |
| The telepathology lab must end up with a network strong enough to withstand high cost data sharing between itself and other companies in an extranet. | Extranet setup between associate companies could be implemented. | This is a critical goal. |
| QPath Telepathology network will be able to tackle real time image viewing. | QPath service should not be interrupted. | It could use fibre optic cable.  This is a critical goal. |
| All systems will attempt to use free software. |  |  |
| All network must be controllable by the IT branch and easily accessible to them. | They require to reset all computers each week in order to avoid possible problems. | Keep in touch with IT chief in order to better facilitate this part. |
| Access to physical switches or data farm might have to be consulted with IT chief. |  |  |
|  |  |  |

## Organization Restrictions

### Business restrictions Table

|  |  |  |
| --- | --- | --- |
| Business restrictions | Info | Comments |
| Project must be finished before June | The director wants the project to be done by June. |  |
| Maximum deployment budget of 118000€ |  |  |
| The telepathology system must always connect with the other labs and at least 1 floor. |  |  |
| There will be a service migration in 2 months. | Cannot touch the data centre until then. |  |
| Traumatology must be connected to the system before the due date. |  |  |
| The new lab will offer 6 new job offers. |  |  |
| No software can be installed without the permission of the IT chief, Arturo. |  |  |
| The deployment can be done now if the service in each floor isn’t interrupted. | Service hours in floor 7 start from 8:00 – 15:00 and 16:30-21:00 but might have delays sometimes. |  |
| Internet network should be expanded to floors 4, 6 and 7. | Floor 4 could need a check-up of its network. |  |
| There will be a new clinic branch being opened in the future. | Could plan for expansion of system into new branch. |  |
| New telepathology lab next door must be connected to current telepathology lab. | Intranet network in order to communicate with it could be integrated or a direct link. |  |
| Hardware must be from brand JUNIPER for the next 2 years. |  |  |
| Most users of the current system are not aware of the systems use. | The need to impart teaching courses on the networks to be deployed and its use might need to be done to department users. |  |

### Technical restrictions

|  |  |  |
| --- | --- | --- |
| Technical restrictions | Info | Comments |
| All apps will be deployed in the 2nd column of servers. |  |  |
| Telepathology QPath will transfer 2-4 gigabytes per image used. | It will require enough broadband to cover the size of the images used. |  |
| Apps installed must be compatible with Windows 7 and libreOffice basic package |  |  |
| Equipment for the new lab is already established. |  |  |
| There exists approximately a 99ms delay between each connection to the data centre. |  |  |
| Switch on bottom floor is mislabelled, it’s a router. |  |  |
| Switch bought must have a minimum of 8 access ports. |  |  |
|  |  |  |

## Network apps analysis

### Basic characteristics of the network apps

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| App name | Type of app | Is it new? | Is it critical? 1.- Very critical  2.- Some critical  3.- Not critical | Location | Comments ¿Will it still be used? ¿Will it be used in the calendar? Etc. |
| libreOffice | Software, Word editing | No | 2 | All computers in each floor |  |
| Windows 7 | Operating system | No | 1 | All computers in each floor | Needed to work. |
| Default Browser | Internet Browser | No | 1 | All computer in each floor | Needed to access critical programs. |
| WakeOnLan | Automatization of remote computers | No | 3 | Used from remote master computer. | Used only for automatization of deployment. |
| Rembo | Automatization of remote computers | No | 3 | Used from remote master computer. | Used only for automatization of deployment. |
| Clinical Registry app | Used for clinical records and radiography | No | 1 | All floor clinics. | It will almost always be used, since there is a chance the network could fail accessing the company app. |
| Analysis results app | Used for accessing results. | No | 1 | All floor clinics. | It will always be used if there is internet access. |
| 4K images app | Used for accessing images. | No | 1 | Traumatology and ophthalmology | It will always be used if there is internet access. |
| Company app | Used via the web browser. | No | 1 | All floor clinics. | It will always be used if there is internet access. |
| QPath | Real time data transfer app, uses image transfer. | Yes | 1 | Telepathology | It will be used in the future and must have uninterrupted internet access. |
|  |  |  |  |  |  |

### Table of Technical requirements of apps

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| App name | MTBF/MTTR (Cada cuanto falla) | Cost of service shutdown | Required transfer rate | Required latency |
| libreOffice |  |  |  |  |
| Windows 7 |  |  |  |  |
| Default Browser |  |  |  |  |
| WakeOnLan |  |  |  |  |
| Rembo |  |  |  |  |
| Clinical Registry app |  |  |  |  |
| Analysis results app |  |  |  |  |
| 4K images app |  |  |  |  |
| Company app |  |  |  |  |
| QPath |  |  |  |  |
|  |  |  |  |  |

## Network characteristics

### User characteristics table

|  |  |  |  |
| --- | --- | --- | --- |
| Users community name | Number of members | Location | Apps used |
| Traumatology Clinic, 4th floor. | 1 | 4th floor | Windows 7, LibreOffice, default browser, company app, clinical registry app, 4K images app, Analysis results app. |
| IT department. | 5 | 2nd floor | Windows 7, LibreOffice, default browser, Rembo, WakeOnLan |
| Pathology lab, 3rd floor | 6 | 3rd floor | Windows 7, LibreOffice, default browser, company app, clinical registry app, Analysis results app. |
| Secretary | 2 | 2nd floor | Windows 7, LibreOffice, default browser |
| Telepathology lab | 4 | 1st floor | Windows 7, LibreOffice, default browser, company app, QPath. |
|  |  |  |  |

### Table of Network traffic generated by apps

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| App | Type of data flow | Protocols used by app | Communities that use the app | Data bases | Required Bandwidth | QoS |
| libreOffice |  |  |  |  |  |  |
| Windows 7 |  |  |  |  |  |  |
| Default Browser |  |  |  |  |  |  |
| WakeOnLan |  |  |  |  |  |  |
| Rembo |  |  |  |  |  |  |
| Clinical Registry app |  |  |  |  |  |  |
| Analysis results app |  |  |  |  |  |  |
| 4K images app |  |  |  |  |  |  |
| Company app |  |  |  |  |  |  |
| QPath |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

## Network elements Map

### Map depicting the location of all network elements and user communities in the system.